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ABSTRACT

Information is presented on China's higher education system, China's current educational exchanges, and the U.S.-China educational exchange process. China's higher education system is considered in terms of historical themes and implications for the present, the number and types of institutions, graduate education, operation of the higher education system, and institutions of research and development. The approximate percentages of Chinese students and scholars presently in the United States are indicated by subject field. The history of the understanding between the two countries regarding educational exchange and formal agreements is addressed. The approximate numbers of Chinese students and scholars in Great Britain, France, the Federal Republic of Germany, and Japan are specified. The U.S.-China Educational exchange process is examined in terms of China's current exchange policies; the evaluation of Chinese academic credentials; Chinese education patterns in the secondary schools, colleges, graduate education, overseas education, and special education; the Chinese college entrance examinations; visa information and related matters; English as a second language; and opportunities for American scholars and students in China. General access to China, teaching opportunities in China, lecturing in China, and research and study programs are addressed. Appended materials include: key colleges and universities and their affiliations by specialization, key contact in the U.S. government, and bibliographies of recent works on Chinese education and science and technology. (SW)

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An Introduction to Education in the People's Republic of China and U.S.-China Educational Exchanges

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Foreword and Acknowledgements

Educational exchanges between the United States and the People's Republic of China are now entering their second year. In 1979, the Chinese government sponsored and placed about 500 scholars and students in nearly 100 institutions around the United States; several hundred additional students from China came to the United States under private auspices. On the American side, the United States government has provided support for the important National Educational Exchange Program, which has sponsored, to date, approximately 60 Americans for advanced study and research in China; dozens of educational institutions in the United States have established or are in the process of establishing exchange relations with counterpart institutions in China; and a wide range of U.S. government agencies have concluded agreements with corresponding agencies in China, which include provisions for the exchange of personnel for training purposes. In sum, at least on the American side, the channels of exchange and the sponsorship of exchangees are numerous, extremely varied and rather decentralized.

During the first year of exchanges, many institutions and individuals sought information on developments which had already taken place and on the potential for further exchange activities. Many inquiries pertaining to China's educational system were directed to the Committee on Scholarly Communication with the People's Republic of China (CSCPRC), a joint entity of the National Academy of Sciences, the Social Science Research Council and the American Council of Learned Societies, which has been a focal point for academic and scholarly exchanges with China since 1972. Advice was also sought concerning the mechanics of exchange and procedures for hosting Chinese students and scholars from the National Association for Foreign Student Affairs (NAFSA), which has several decades of experience regarding foreign student concerns in the United States.

In order to meet the expanding need to disseminate information which can facilitate future educational exchanges between the United States and the People's Republic of China, the U.S.-China Education Clearinghouse was formed in October 1979. The Clearinghouse is a joint project of CSCPRC and of NAFSA and is supported by the U.S. International Communication Agency. The main purposes of the Clearinghouse are: (1) to provide information about China's education system to U.S. institutions of higher education; (2) to collect and share information about U.S.-China institutional relationships and student/scholar exchanges in the area of higher education; and (3) to channel recommendations received from the American higher education community on U.S.-China educational relations to appropriate U.S. government agencies.

It should be noted that because China prefers to place its personnel directly through its own contacts at U.S. institutions, the Clearinghouse is *not* a placement service for Chinese students and scholars. It also is not the mandate of the Clearinghouse to serve as an advocate of particular U.S. institutions or organizations *vis à vis* the Chinese government.

This publication, *An Introduction to Education in the People's Republic of China and U.S.-China Educational Exchanges,* was written and compiled by Pierre M. Perrolle and Linda A. Reed of the CSCPRC staff and the NAFSA staff, respectively. Information on the Chinese system of higher education is based on documentation collected by the CSCPRC's Resource and Information Center and on Dr. Perrolle's first-hand visits (multiple visits in some cases) to over a dozen educational institutions of higher education in China. Information on the exchange process and the current status of exchanges has been derived largely from conversations with administrators at American colleges and universities and with U.S. government officials. This *Introduction* is not intended as a definitive analysis either of China's educational system and policies or of the exchange process to date. It aims, rather, to provide background information which we hope will be of use to American educators and educational administrators in managing their exchange relationships with the People's Republic of China. Any views contained in this publication are not necessarily those of NAFSA, of the CSCPRC and its sponsoring organizations, or of the U.S. International Communication Agency. Any inaccuracies contained herein are the responsibility of the authors.

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Any comments or questions about this publication or about Clearinghouse projects should be directed to:

Dr. Pierre M. Perrolle
Committee on Scholarly Communication with the People's Republic of China
National Academy of Sciences
2101 Constitution Avenue
Washington, DC 20418
202/389-6795

Ms. Linda A. Reed
National Association for Foreign Student Affairs
1860 19th Street, NW
Washington, DC 20009
202/462-4811

Throughout 1980, the Clearinghouse will be updating and supplementing the information presented here in additional special publications and in the CSCPRC's *China Exchange Newsletter* and the *NAFSA Newsletter*.

Additional copies of this publication may be obtained from the U.S.-China Education Clearinghouse, 1860 19th Street, NW, Washington, DC 20009.

Pierre M. Perrolle, CSCPRC
Linda A. Reed, NAFSA
U.S.-China Education Clearinghouse

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I. China's Higher Education System

A. HISTORICAL THEMES AND IMPLICATIONS FOR THE PRESENT

Education in China and, more generally, China's policies toward intellectuals are currently undergoing a thorough restoration after a stormy period of more than a decade referred to as the Cultural Revolution or the era of the "Gang of Four" (a reference to Mao Zedong's wife and three other leaders who rose to political power in the late 1960's). In that decade, some very bold experiments which affected virtually all sectors of Chinese society were undertaken in an effort that has been characterized by some as a serious attempt to promote social equality at a higher priority than technological development and economic growth, and by others as merely a set of self-serving schemes of a small but powerful leadership clique.

Regardless of how one interprets the events of the decade from 1966 to the death of Mao Zedong in 1976, which was immediately followed by the toppling of the "Gang of Four," the policies of that period, including educational policies, were extremely retrogressive in relation to China's current goals. China's major policy direction is now encapsulated in the term, "Four Modernizations" (referring to agriculture, industry, science and technology, and national defense), a policy also described as a "New Long March" toward making China a strong, economically developed socialist country by the end of the century.

According to Mao Zedong and others who led the Cultural Revolution in the late 1960's, China was drifting in a "capitalist" direction, in which a new class, a self-perpetuating intellectual and bureaucratic elite, was growing rapidly and becoming increasingly entrenched. In addition, widening gaps between the cities and the countryside and between mental and manual labor were flagged as unhealthy trends. In its initial stages, the Cultural Revolution was carried out by mobilizing the young, primarily urban Chinese. As a consequence, higher education was a prime target of attack and its institutions were completely closed for a period of about five years. When colleges and universities reopened in the early 1970's, policies had undergone drastic changes.

In an effort to close the gap between manual and mental labor and to preempt the formation of an intellectual class, all middle school graduates were required to work in factories or on farms for a period of at least two years. Students were recruited for college in limited numbers, on the basis of a system of "recommendation" by their work

units, which took into account family-class background (in an effort to affirmatively recruit children of workers and peasants), political attitudes, and work attitudes, while de-emphasizing academic criteria. Examinations were abolished altogether on the argument that they were formalistic devices which systematically excluded the educationally disadvantaged children of workers and peasants.

In the universities themselves, the curriculum was redesigned to meet the needs of production, narrowly defined. Little utility was attached to liberal arts subjects (the content of which became thoroughly infused with ideological rhetoric and formalism), or the basic sciences. College curricula were shortened to three years, from five years previously, while the primary and secondary school curricula were shortened to five years each, instead of six previously. Within those three years, the contents of curricula were further trimmed by the allocation of extensive amounts of time to political study meetings and to productive labor on or off campus. The faculty were demeaned (and often subjected to very strong abuse, particularly in the early stages of the Cultural Revolution) as parasites on society. Even as teaching resumed in the early 1970's, teachers were held in an adversary situation *vis à vis* their students. Little faculty or student research was tolerated except as it related directly to specific production problems and many research facilities therefore went into disuse.

Within these broad lines, however, the circumstances at each institution and for each individual probably varied greatly. It should be noted that the current vociferous denunciations of the Cultural Revolution period are prone to substantial exaggerations and generalization. In fact, there is solid evidence that *some* sound teaching went on, that *some* research was carried out, and that *some* of the students selected on the basis of recommendation were in fact intellectually talented.

Current educational policy is essentially a return to pre-Cultural Revolution days, an effort to pick up where things were interrupted in 1966. Students are once again being recruited directly from senior middle school into colleges and universities on the basis of a nationally standardized test. All indications are that examination results and related academic achievement credentials are virtually the sole determinants of educational access. College curricula have been lengthened to four years (and possibly longer) and non-academic activities (political study meetings, physical labor) are being curtailed. Research activities for students and faculty are flourishing once again and research facilities are being rapidly upgraded. All in all, an open atmosphere of intellectual activity has been restored and the 1956 slogan of "letting a hundred flowers bloom, letting a hundred schools of thought contend" has come back into use. All intellectuals, and scientific personnel in particular, are being awarded prominent status in

Chinese society. In some sense, current policy toward intellectuals can even be viewed as a return to the period preceding the Anti-Rightist movement of 1957 which resulted in a long-term policy of circumscribing the activities of intellectuals (enforced more severely at times than others).

The new policies generally constitute a return to "normalcy" and are consistent with some long-term trends, many of which precede the establishment of the PRC in 1949. This may be cause to expect some steadiness in policy, although, in view of the sharp political twists and turns which China has experienced in the past couple of decades, one should still remain sensitive to possible surprises. Details concerning new policies will be covered at a later point in these materials. Before turning to these specifics, however, it is useful to consider some historical background and its implications for the present.

In terms of its basic institutional structure, higher education in China has not changed drastically since the early 1950's when, as in other sectors of economic and political organization, China patterned herself after the Soviet Union. This organizational structure will be described in a later section. Even though China has, of course, long abandoned its cooperative relationship with the Soviet Union, the institutional structure has become so well established after three decades, that it is unlikely that sudden and major changes will occur in the foreseeable future.

Modern (i.e., Western) schooling in China had its early roots in the late nineteenth century (with a few very select technical and language schools) and developed in the early twentieth century under the extensive advice and heavy influence of foreigners in China, notably from the United States, Britain, France, Germany, and Japan. Part of this foreign influence in education was also manifested in the more than 30,000 Chinese who studied abroad. The educational quiltwork, which was inherited when the People's Republic was established in 1949, was the consequence of multiple foreign influences and of the decades of external and internal war suffered by China. In the early 1950's, education was taken out of foreign hands and higher education was reorganized on the Soviet model, which is best characterized by its strong emphasis on science and technology and on the topical specialization of institutions.

Historical trends of the past century, and even of the past three decades include a number of threads of continuity which continue to be in evidence today. The long struggle for technological development, which is to provide China with the basis for preserving herself against the encroachment of foreign forces and to establish and maintain a position of importance in the world, is the most basic of these themes of continuity. A few more specific themes are suggested below:

1. Education as a public enterprise and a governmental responsibility:

From the early beginnings of Chinese history, education as the vehicle of continuity for sociopolitical and cultural values and as the channel for recruiting a small but homogenous body of political leaders has been viewed in China, as in many traditional societies, as a major governmental responsibility. In the Chinese case, even as Western forms of education began to be introduced in China, the initiative for change remained almost entirely in the hands of the government. Because, in the late nineteenth century, the integrity of China was seen to be at stake in its interactions with Western nations, modernization (especially in the sense of adoption of Western technology) was perceived by the prevailing political forces (though certainly not by all of China's leaders) as the key to "self-strengthening," to national preservation. Higher education in Western technologies was in turn made the cornerstone of such a modernization effort, an area too vital to be left outside governmental initiative. Private education occurred only in the form of Western-managed institutions, a form which ultimately became unacceptable, for international political reasons, to the Chinese government after 1949. While the degree of foreign involvement in China's educational system remains to this day a matter of policy debate (to be noted further below), the absence of private educational institutions in China is a fundamental feature of the modern educational system which is not likely to change in the foreseeable future. In addition, of course, the overall trend away from private enterprise in a socialist society has reinforced the public nature of education in China.

2. A higher education system which stresses science and technology:

Despite some very severe fluctuations and crosscurrents in educational policy in China over the past century and especially in recent years, global forces which lay beyond the control of any single nation or society constitute an imperative for technological modernization throughout the world. Within these policy fluctuations, one can perceive a recurrent return to stressing the need for modernization, initially, at least, in the sense of technological development. While other areas of knowledge such as economics, management or law, and cultural areas such as literature and the arts may be perceived as ultimately important as well, it is clear that now, as in past decades, science and technology are perceived as China's most pressing educational need. In the short run, therefore, we can continue to expect science and technology to constitute the major component in higher education.

3. Higher education with practical goals:

One corollary of the preceding point is that education, rather than having a purely intrinsic value attached to it, has been closely related in China to broader policy goals. In a sense, the educational system must "prove itself" in terms of those wider goals. When modernization was *not* given priority (during the Cultural Revolution, for instance), the educational system was accordingly devalued. Even in the current phase of policy, frequent statements of Chinese leaders which tie educational efforts closely with the drive for achievements in economic production suggest that education cannot survive solely on its own merits but has to demonstrate results. This basic role attributed to higher education is also evident in the ongoing emphasis on applied science and technology rather than basic sciences. (One should note, however, that more abstract goals such as national prestige can provide the justification for efforts in the basic sciences, such as high-energy physics.)

4. Discontinuities in educational policy:

Because education is solely a governmental effort and because it is closely tied to other goals, if rather abrupt political shifts continue to occur in China as they have over the past three decades, further discontinuities could occur in educational policy. Even without such major policy swings, the close link which has been postulated between education and the concrete results expected of the educational system could mean that, in China's relatively charged political atmosphere, certain educational policies could be vulnerable to swift condemnation from opponents of those policies who may press for hasty conclusions about the effects of current policy. For the above reasons, one should anticipate some possibility of policy changes, potentially even very extensive changes, which, of course, may have direct implications for international educational exchanges.

5. Ambivalence about foreign involvement in education:

For over a century, Chinese leaders have consistently displayed ambivalence concerning an appropriate degree of involvement with the world of scholarship and education beyond China's borders. While the specifics of interchange have changed greatly over the past century, there remains a strong sense that there ought to be limits of "penetration" and the preservation of a cultural or national essence, be it the set of Confucian principles of social order of a century ago or the socialist ideology of today. In practice, however, there can be no objective assessment of where one ought to draw the line in this matter, and specific policies will merely reflect the current balance of opinions on the subject. The dramatic shifts in policy over the past three years suggest the wide range of possible opinions on the issue of foreign ties. We

should therefore remain sensitive to a possibility of changes in the opinion balance which could strike at the heart of international educational exchanges.

6. Pluralism within the system:

The centralized nature of China's educational system suggests considerably more unity of policy than should in fact be expected. It is important to stress that a variety of interests are at stake in China's educational system and that, for that reason, within the unified organizational framework, detailed implementation of educational policy (for instance, in regard to our main concern here, the management of international ties) may vary a great deal from one institution to another. To name a few potential areas of cleavage within the Chinese system, there are competitive relationships (often accentuated by the basic shortage of resources) among bureaucratic systems (such as the Ministry of Education or the Chinese Academy of Sciences), among institutions (universities, research institutes), among scholars in various fields, among scholars of various generations and backgrounds, among regional (especially provincial) administrations, and so forth. Since these lines cross each other in numerous and complex ways, one cannot say *a priori* what might occur in a given situation. One should, however, avoid thinking monolithically about "the Chinese" in dealing with a society which in many ways is as complex and pluralistic as our own.

B. THE INSTITUTIONS OF HIGHER EDUCATION

1. Number and types of institutions:

China currently has approximately 600 institutions of higher education. Recent figures have ranged from 598 to 629, reflecting an ongoing readjustment of the organization of higher education. On the whole, the trend has been to restore institutions that were closed (entirely or amalgamated with other institutions) during the Cultural Revolution and to establish new institutions in line with the goal of expanding the higher education system to the greatest extent possible given limited resources. Prior to 1966, when colleges and universities were initially closed, there were about 430 institutions of higher education.

"Key" Institutions:

A major dichotomy one can make is that between "key" and non-"key" institutions, a distinction which actually applies to secondary schools as well as to institutions of higher education. Key institutions are those which have been designated as priority institutions for development. Many key universities have long enjoyed a position of prestige in China, even before 1949, and the concept of key institution was al-

ready used in the 1950's and 1960's. Key institutions receive a lion's share of financial appropriations for development (buildings, equipment, faculty development, sending personnel and students abroad, libraries, research funding), and for these reasons it is the key institutions which can be expected to be the most involved in international exchanges. *At the same time*, it is not inconceivable that non-key institutions might be involved in exchanges, particularly if financial support is provided from abroad. There is also no glaring "quality gap," according to the observations of American visitors to China, between some of the smaller key institutions and non-key institutions of similar size. (See Appendices A and B for lists of key institutions by specialization and by alphabetical order.)

Institutional Specialities:

Furthermore, institutions of higher education can be categorized according to the nature of their curriculum. As a result of the Soviet influence and advice at the time the educational system underwent a major organizational overhaul, most Chinese institutions tend to be highly specialized in their curricular focus. One can therefore distinguish the following types of institutions:

(a) Comprehensive: institutions whose curricula encompass both basic and applied sciences and the liberal arts. These include such high-prestige institutions as Beijing University, Nanjing University, Fudan University, Zhongshan University and Nankai University, as well as a number of provincial universities such as Shandong University and Sichuan University. These are run by the Ministry of Education or provincial Bureaus of Education and probably constitute about 5 percent of all institutions of higher education.

(b) Polytechnic Universities: institutions whose curricula cover a broad range of applied sciences and engineering subjects. These include Qinghua (Tsinghua) University, Tongji University and Shanghai Jiaotong University. These are also generally run by the Ministry of Education or the provincial Bureaus of Education and constitute about 10 percent of institutions of higher education.

(c) Scientific Universities: universities which are run by the Chinese Academy of Sciences (CAS) for the purpose of training personnel for their research institutes (which focus on the basic sciences). These include the Chinese University of Science and Technology (in Hofei, Anhui) and the Universities of Science and Technology in Chengdu and Haerbin (all run directly by the CAS) and such institutions as the Shanghai University of Science and Technology run by the Shanghai Branch Academy of Sciences. (The CAS also runs Zhejiang University, a prestigious polytechnical engineering college to serve the engineering personnel needs of its institutes.)

(d) Specialized Technical Colleges and Universities: institutions whose curricula focus only on one area of engineering (e.g., Beijing Aeronautical College or the East China Petroleum Engineering College). Most of these institutions tend to be run by the relevant industrial ministry and they probably constitute about 20 percent of all institutions of higher education.

(e) Normal Colleges: colleges run by the Ministry of Education (or provincial Bureaus of Education) for the purpose of training teachers primarily at the primary and secondary levels. The most prestigious of these, such as Beijing Normal College and Shanghai Normal College, offer fairly comprehensive curricula. They enroll about one-third of all higher education students and probably constitute over one-quarter of all institutions of higher education.

(f) Medical Colleges: colleges run by the Ministry of Public Health or provincial Public Health Bureaus. Most focus on Western medicine, but there are also a handful of colleges for traditional Chinese medicine and veterinary colleges. Medical colleges constitute an estimated 20 percent of all institutions of higher education.

(g) Agricultural Colleges: colleges managed by the Ministry of Agriculture (or local Bureaus of Agriculture) or by the recently reestablished Ministry of Agricultural Machinery. In a country where about four-fifths of the population is still engaged in agricultural work, agricultural schools play an important role. They probably constitute about 15 percent of all colleges and universities.

(h) Specialized Non-technical Colleges: institutions in the area of finance and trade, commerce, politics and law, foreign languages, music, fine arts, performing arts and physical education. These are fairly few in number.

2. Graduate education:

Graduate education in China began only in the mid-1950's and between that time and the onset of the Cultural Revolution in 1966, Chinese institutions trained approximately 16,000 students at the graduate level (without granting them formal degrees, but only certificates of completion of their programs). Approximately 3,000 other Chinese students studied at the graduate level in the Soviet Union and Eastern European countries between 1955 and the early 1960's.

Graduate education was restored in the fall of 1978 and about 19,000 graduate students are currently enrolled in over 200 institutions of higher education and about the same number of research institutes (where the bulk of graduate training consists of research apprenticeship with senior researchers). The Chinese Academy of Sciences runs an important graduate school of the Chinese University of Science and Technology. This graduate school has a Beijing campus

where students spend approximately one year in coursework in basic scientific subjects and foreign languages before being placed in their respective CAS research institutes for their research work.

At the time of this writing, it seems that the awarding of graduate degrees (doctorates and "assistant doctorates," equivalent perhaps to Master's degrees or an "a.b.d.") is soon to be instituted. This policy is likely to include a provision for the acquisition of degrees overseas.

3. A composite profile of a Chinese institution of higher learning:

Most institutions of higher learning in China are not enormous. A ball-park figure for current enrollments (consisting at this point of only three classes due to the recent restoration of the educational system, with full complements anticipated by the fall of 1980, or 1981 in five-year programs) is about 2,000 to 8,000 students (with graduate enrollments running about 5 percent of total enrollments).

The faculties tend to be relatively large by American standards, usually one faculty member for three students. One must take into account, however, that often as much as 50 to 80 percent of the faculty consists of "teaching assistants" who are generally not graduate students but full-time faculty members who perform many of the functions of our own teaching assistants, such as grading and tutorials. Lecturers (15 percent or more of the faculty) provide the backbone of the teaching faculty, although their teaching loads are not usually as heavy as for junior faculty in the United States (except in certain subjects, such as foreign languages, requiring more intensive teaching). Associate professors have even lighter loads and constitute the most active core of researchers on campuses (and are therefore most likely to be involved at the level of graduate education). Full professors, who constitute under 5 percent of the faculty, are often quite senior and are consequently not always active in teaching or research.

Most students are campus residents. Since, however, there is more teaching space than dormitory space, institutions have sought to expand enrollments by taking in commuter students (constituting a 35 percent increment in 1978-79 new enrollments), often on a branch campus, which is usually closer to urban centers than the main campus, which is typically located at some distance from the center of the city (Fudan and Qinghua Universities, for instance, have done this).

The material conditions of teaching laboratories, libraries and other educational facilities are generally adequate (although in need of expansion and improvement). The years of disuse or misuse of equipment and facilities during the Cultural Revolution have had a two-sided consequence. Initially, such disuse weakened the existing physical structure of education. However, it has also provided the opportunity for renewing and upgrading facilities. Some newly restored and equipped teaching laboratories have been reported as being equal to or superior to equivalent U.S. facilities. Classes (even in foreign lan-

guages) are extremely large, and the atmosphere (on the basis of recent observations) remains traditionally passive—the instructor lectures while the students follow along (often using mimeographed lecture notes or increasingly textbooks, since there is now a widespread movement to publish new texts), while taking copious notes of their own.

Ties between student and teacher, and between fellow students (particularly in the same year and in the same department) remain, in keeping with Chinese tradition, very close and of lifelong duration. The intensity with which a professor usually recommends his students is one manifestation of the close student-teacher relationship.

C. OPERATION OF THE HIGHER EDUCATION SYSTEM

1. Undergraduate and graduate curricula:

The *undergraduate* curriculum was typically a five-year curriculum before 1966. During the early 1970's, as formal education was devalued, a three-year curriculum (further abridged by extended periods of labor practice, political education meetings and community work) became the norm. Currently, a four-year curriculum is the most prevalent. There are very strong indications at the time of this writing, however, that a five-year curriculum may be reinstated at a wide range of institutions and that six-year curricula may be established in some universities (at least in difficult subjects, such as mechanics, which require more extensive grounding in mathematics).

The *graduate* curriculum can range from two to four years. Since graduate study is still in its formative stages, curricular patterns are somewhat unclear. The variety of patterns in part reflects the fact that the current generation of new graduate students consists either of individuals who were about to begin graduate training when the Cultural Revolution began (and who may have had some in-lab training depending on their fate during the Cultural Revolution) or individuals who did their undergraduate work in the early 1970's under limited learning conditions (and whose graduate training in fact consists of much remedial work). Furthermore, since graduate programs are still very small, it is likely that the graduate curriculum is somewhat *ad hoc* and relies heavily on a flexible but close student-advisor/main professor instructional relationship.

2. Recruitment:

The higher education system in China is highly selective as a result of attrition at each successive rung on the educational ladder. Very roughly speaking, less than one in a hundred persons of college age in China enters college. In 1978, 146 million students were enrolled in primary schools, reflecting near universality in the urban areas, though not in the rural areas. Following a five-year curriculum (now

perhaps tending toward six years in certain areas), about three out of five students move on to junior middle school for a three-year course of study. Current enrollment in junior middle schools is 65 million students. Approximately one in three students then moves on to either a regular middle school or a technical ("specialized") middle school. The technical middle school is largely considered a terminal program, which may last two, three or four years. There are 800,000 students currently enrolled in about 17,000 such schools (in 345 different "specialities" according to a recent report). In the regular senior middle schools, there are an estimated 12 million students. Of these, about 300,000 per year (or 1 in 20) are able to enter college. The remainder have been described by education officials in China as "entering the labor pool" (and are now admitted to be affected by high levels of unemployment).

Those who enter college (and aspirations of doing so are very widespread) are recruited almost exclusively on the basis of a nationwide standardized entrance examination (which is discussed in detail in the section on academic credentials). Students are now, as before the Cultural Revolution, recruited directly from senior middle schools into colleges and universities, without first spending a period of two years or more in productive labor, as was required during the early 1970's.

Recruitment into graduate programs is also based on examination performance, on the basis of separate examinations which are conducted by each graduate institution (consisting both of a general and a "speciality" examination).

3. Enrollments:

Current enrollments in institutions of higher education in China stand at approximately 1 million. This reflects an enrollment of three classes only (the first four-year class – which should have entered in the fall of 1977 – entered college in the spring of 1978). If this figure is extrapolated on the basis of a four or five-year curriculum, total enrollments can be expected to reach about 1.2 to 1.5 million within one to two years. Annual enrollments have been as follows: spring of 1978, 278,000; fall of 1978, 400,000 (including an "enlarged enrollment" of 108,000 which refers to an influx of commuter students, often on inner-city branch campuses recently established for this purpose); fall of 1979, 270,000 students.

As far as graduate enrollments are concerned, it was reported that 10,500 students were enrolled in the fall of 1978; 8,000 in over 200 colleges and universities, the rest in over 150 research institutes. In the fall of 1979, 8,500 more graduate students were enrolled. Again, most were enrolled in universities (7,200), the rest in research institutes of the Chinese Academy of Sciences (350 students) of the Chinese Academy of Social Sciences (150 students) and of various ministries and the military (over 600 students). Thus, more students are now pursuing

graduate programs than completed such programs altogether in the decade preceding the Cultural Revolution.

D. INSTITUTIONS OF RESEARCH AND DEVELOPMENT

The world of scholarly research in China is not uniquely or even predominantly based in its system of higher education. In terms of international educational exchanges, since China is basically attempting to upgrade the professional levels of its current researchers as well as training future generations of professionals, China's "students," in the broad sense, consist not only of those affiliated with *educational* institutions but numerous others affiliated with other sectors in which research takes place. Perhaps as many as half the Chinese students and scholars currently in the United States are from research institutes rather than universities. In this section, therefore, we supplement information on the higher education system with a brief outline of China's research and development sectors.

In addition to the academic research sector (which is currently gaining rapidly in relative importance), research and development in China take place under two major institutional auspices. One of these is the Chinese Academy of Sciences (sometimes referred to as the Academia Sinica) and the other is China's central ministry (and ministry-level agency) sector (most of these industrially oriented).

The Chinese Academy of Sciences (CAS) is a prestigious organization with roots which go back to the 1930's and which traditionally has had a strong voice in the formulation of science policy. The CAS manages over 100 research institutes (with research personnel numbering a few hundred in most cases) scattered around China, but concentrated in Beijing and Shanghai. These are listed in Appendix C. Their primary emphasis is in the basic sciences. As noted earlier, the CAS also runs several universities and its research institutes train researchers at the graduate level.

The ministries (other than the Ministry of Education) and equivalent central government agencies manage a number of research institutes (perhaps a thousand altogether) where much applied research and development takes place. In some cases, scientific academies coordinate the activities of subordinate research institutes. Major academies which have a long history of operation are those of Medical Sciences (under the Ministry of Public Health) and the Academies of Agricultural and of Forestry Sciences (amalgamated prior to 1979 when the Ministries of Agriculture and Forestry were one). More recently established academies are those for Space Science, Geological Sciences, Meteorological Sciences, Coal Mining Sciences and Electric Power Sciences, which are believed to be under the supervision of the relevant ministries or bureaus. A list of ministries and central bureaus appears in Appendix F.

Industrial ministries run the major factories in China and, in the interest of upgrading the skills of some of their technical personnel, these ministries may be sending a limited number of engineers and technicians abroad for advanced training. As noted previously, ministries also run a number of colleges in various degrees of cooperation with the Ministry of Education.

One should note in passing that in late 1977, China established a Chinese Academy of Social Sciences (CASS) which grew out of the pre-Cultural Revolution Philosophy and Social Science Department of the Chinese Academy of Sciences. The CASS runs about two dozen research institutes, which are listed in Appendix D. The current emphasis of research in those institutes is on economics and law, although such fields as history, philogophy and linguistics are increasingly active as well. It should be noted that research in psychology has, to date, taken place under CAS auspices (Institute of Psychology) rather than under CASS auspices.

II. Overview of China's Current Educational Exchanges

A. CHINESE STUDENTS AND SCHOLARS PRESENTLY IN THE UNITED STATES

Chinese students and scholars began arriving in the United States for advanced training and research in the fall of 1978. As of the end of October 1979, there were approximately 450 students and scholars from the PRC in the United States under official PRC government sponsorship or on reciprocal exchange programs with U.S. institutions, according to Chinese Embassy sources. Of these, approximately 15 percent are of student status (including a handful of undergraduates, most of whom are studying English); the rest are "visiting scholars" (as defined by the Chinese government). Because the bulk are not enrolled as students, their arrival in the United States has not necessarily coincided with the beginning of academic semesters. There continues, therefore, to be a steady flow of Chinese scholars arriving weekly in the United States.

These officially-sponsored students and scholars have become affiliated with over 90 U.S. institutions, the bulk of which are major universities (about evenly divided between public and private), the rest private or governmental research centers, such as Fermilab. Bearing in mind the ambiguities of coding research topics into general fields, the students are distributed as follows:

physics	over 20%	(pure and applied, including laser research but not mechanics; prominent sub-fields include nuclear physics, high-energy physics and solid-state physics)
chemistry and chemical engineering	over 12%	(including polymers but not biochemistry)
mechanics and mechanical engineering	over 8%	(including solid and structural mechanics, aeronautics and astronautics but excluding rock and soil mechanics)
mathematics	8%	(pure and applied, but not computer sciences)

computer sciences	over 10%	(applications and software)
electronics	over 4%	
materials sciences and engineering	over 7%	(including mining and metallurgy but excluding solid-state physics)
earth, atmospheric and environmental sciences	over 4%	(including geology, rock mechanics, earthquake studies, geophysics, petroleum geology, meteorology)
biological sciences	over 8%	(including biology, biochemistry, biophysics, genetics)
medical sciences and engineering	nearly 7%	(medicine, physiology, pharmacology)
other	about 4%	(such as agriculture, economics, English)

the remainder are unidentified

In addition to this officially-sponsored group, U.S. government sources estimate that an additional 300 PRC students are presently in the United States under private sponsorship by friends or relatives, bringing the total number of hosting institutions to about 160. PRC personnel in the United States for short-term training in relation to commercial contracts are not included in either category mentioned above.

A number of major universities in the United States have "sister school" relationships with Chinese institutions of higher learning and/or agreements with the Chinese Ministry of Education and the Chinese Academy of Sciences. These are not exclusive relationships, but indicate, rather, a particular receptivity of the institutions involved to be responsive to the requests of the other and to act as a potential broker *vis à vis* other institutions. These agreements vary in format and in their degree of formality. The Clearinghouse is currently conducting an extensive survey of institutions regarding such arrangements and will be giving a full and detailed report on the subject in a later publication.

American institutions seeking to develop relations with Chinese institutions should deal directly with the presidents of those institutions (Chinese educational institutions do not have special offices for international affairs), with the Chinese Ministry of Education or other relevant agencies in China (current contact persons are listed in Sec-

tion III. E.3.) and with the PRC Embassy in Washington, DC (see Section III. E.3.). In addition, American institutions may wish to consult the Clearinghouse/CSCPRC office for further advice.

B. U.S. GOVERNMENT AGREEMENTS PERTAINING TO EDUCATION

Educational exchanges between the United States and the PRC have been sanctioned and encouraged under a complex array of bilateral governmental agreements. At the post-secondary level (which, to date, constitutes the major focus of U.S.-China educational exchanges), the most general and comprehensive agreement remains the "Understanding on the Exchange of Students and Scholars."

1. History of the Understanding on Student and Scholarly Exchanges:

In July 1978, the President's Science Adviser, Dr. Frank Press, made an official visit to Beijing which proved to be a major turning point in U.S.-China relations. Press led a group of high-level government agency administrators concerned with science and technology, representing the Department of Energy, National Aeronautics and Space Administration, National Institutes of Health, National Science Foundation, Department of Agriculture, U.S. Geological Survey and the Commerce Department. In the wake of the visit, the government of the PRC announced that scholarly exchanges between the United States and China would expand rapidly even in the absence of diplomatic relations between the two countries. Chinese leaders also announced their intent to break with past isolationist policies in education by sending students and scientific and technical personnel abroad in substantial numbers, particularly to the United States, Japan and Western Europe.

This new policy was put into practice with regard to the United States with the visit of a Chinese educational delegation led by Professor Zhou Peiyuan, President of Beijing University and Head of China's Scientific and Technical Association, and by Mr. Li Qi, Vice Minister of Education, in October 1978. The Chinese delegation toured a number of major institutions of higher education in the United States and, while in Washington, held extensive meetings with U.S. government representatives led by Dr. Richard Atkinson, Director of the National Science Foundation. These meetings resulted in an informal understanding that educational exchanges would begin as soon as possible between the two countries. The agreement specifically cited targets of 500 to 700 Chinese students and scholars coming to the United States in the 1978-79 academic year and 60 Americans going to China by September 1979. A major feature of the agreement is that the sending side assumes all costs (without precluding acceptance of any financial

aid offered by host institutions). Potential agreements involving individual U.S. institutions are not restricted by this agreement.

2. Formal agreements related to educational exchanges:

Immediately after normalization of relations between the United States and China in January 1979, Vice Premiers Deng Xiaoping and Fang Yi (Minister in Charge of the State Science and Technology Commission) visited the United States. At that time, two major accords were signed: one for Cooperation in Science and Technology; the other for Cultural Exchanges. To the Science and Technology (S&T) Accord was appended a number of subordinate agreements, including the original text concerning student and scholarly exchanges. Other appended agreements were those in agriculture (originally reached informally between USDA and the Ministry of Agriculture in November 1978), in space sciences and in high-energy physics (a detailed implementing agreement).

Since that time, many additional agreements have been signed in various areas of science, technology and education. At the time of former Commerce Secretary Juanita Kreps' May 1979 visit to China, protocols were reached between: National Oceanic and Atmospheric Administration (NOAA) and the Central Meteorological Bureau in meteorology; between NOAA and the State Bureau of Oceanography on oceans and fisheries research; between the National Bureau of Standards (NBS) and the State Bureau of Metrology on measurements and standards; and between the Commerce Department's National Technical Information Service (NTIS) and the State Science and Technology Commission. At the time of former HEW Secretary Joseph Califano's June visit to China, an agreement was reached concerning 11 specific educational exchange activities. During the August 1979 visit to Beijing by Vice President Mondale, an Implementing Accord to the Cultural Agreement was signed, calling for four other education-related items. Also, at the time of the Mondale visit, a Protocol for Cooperation in Hydroelectric Power and Related Water Resource Management was signed. Virtually all of these accords and protocols call explicitly for the exchange of personnel for training. Educational activities now formally agreed to are summarized in Appendix G.

3. The future of the Understanding on Exchanges of Students and Scholars:

In accordance with the U.S.-PRC Agreement on Cooperation in Science and Technology, a Joint Commission was established, whose mandate is to plan and facilitate cooperative activities and monitor their development. Since the Understanding on the Exchange of Students and Scholars is subsumed under the S&T Agreement, when the first meeting of the Joint Commission is held in Beijing in January 1980, it is expected that the next phase in the exchange of students and scholars will be discussed. The achievements of the first year of ex-

changes as well as the concerns expressed by the American academic community have been channeled to the U.S. side of the Joint Commission in preparation for the Beijing meeting. The membership of the Joint Commission is presented in Appendix H.

C. U.S.-CHINA EDUCATIONAL EXCHANGES IN GLOBAL CONTEXT

In November 1979, Chinese government sources reported that the PRC has sent 2,230 government-sponsored students and scholars to 33 countries since January 1978. Among those who have gone abroad, 1,600 are researchers or scholars, 180 are graduate students and 420 are undergraduates. About 1,800 major in natural science and 400 in social science and languages. The United States hosts the largest number, now about 500. Approximate numbers in other major host countries were cited as follows:

Great Britain	300	(British sources indicated that, as of October 1979, fewer than 200 had actually been placed; all are Chinese government sponsored)
France	200	(French sources indicated that, as of October 1979, about a third of these had been placed; about three-quarters of them are Chinese government sponsored, the rest sponsored by the French government)
Federal Republic of Germany	200	(German sources indicated that, as of October 1979, about half had been placed—all of these are Chinese government sponsored; various German research organizations and foundations are also sponsoring over 150 others)

Japan	100	(Japanese sources stated that, as of October 1979, this many had been placed and are Chinese government sponsored, in addition to about 20 others on Japanese government scholarships)

In Western European countries, as in the United States, most of the Chinese trainees are advanced scholars in the 35 to 45 age range rather than graduate or undergraduate students. Japan, however, may be receiving substantial numbers of advanced undergraduate students in coming years. As is the case in the United States, representatives from hosting institutions in other countries have reported some concern about the incompleteness of student credentials provided by Chinese institutions, inadequate training in the local language (or in English) and very limited living stipends provided by the Chinese government to their students and scholars. These problems have not been of critical proportions to date, but are being carefully monitored for their potential repercussions on the effectiveness of the educational exchange programs.

The Chinese government has never announced formal quantitative goals for their international exchange programs. When the inauguration of the new, large-scale programs was announced in August 1978, informal figures that were reported from China ranged in the order of 10 or 20,000 by 1985. One must bear in mind, however, that since that time, China's developmental goals (particularly those requiring expenditure of foreign exchange) have been substantially curtailed.

III. U.S.-China Educational Exchange Process

A. CHINA'S CURRENT EXCHANGE POLICIES

1. Current priorities:

China's current policy of sending academic personnel abroad represents a return to academic policies of the mid-1950's involving, however, a completely different set of host countries since China's international ties have shifted from the socialist camp to the Western world. At the same time, international exchanges are a means of making up the development lost during the decade of the Cultural Revolution (1966-76) when higher education programs in China were severely curtailed.

China's aim in sending students and scholars overseas is primarily to provide advanced research training to personnel in those fields of science and technology which are of current priority to the Chinese government (such as computer science, laser technology and high-energy physics). In this early phase of exchanges, the Chinese government is focusing on a generation of researchers whose graduate training was left incomplete because of the disruption in the higher education system which began in 1966 and lasted for over a decade. These individuals are now mostly in their late thirties and early forties. Because they suffered shortcomings in their professional preparation and development, they are prime candidates for advanced study overseas. However, because of their age and the fact that they are already mid-career professionals, they tend to be precluded from simply enrolling as graduate students. Thus, more than 80 percent of those sent to the United States by China in this first year of exchange consist of "visiting scholars" (in Chinese terminology) rather than students. They seek specialized and advanced research experience rather than broader degree-oriented academic programs.

As China's newly restored undergraduate and graduate educational systems begin to produce a new generation of carefully selected high-quality students, China will be seeking to expose them to advanced graduate study and sophisticated research experience in modern industrial nations. Thus, in the exchanges, it is reasonable to expect that the generation of "visiting scholars" will eventually give way to a larger number of younger degree program students, probably at first primarily at the graduate level.

In addition, even today there are Chinese students and scholars in the United States who are not included in the main contingent de-

scribed above, and the spectrum of their aims and backgrounds is indeed very broad. They include scholars in such non-science fields as economics and law and future foreign service personnel in English language and American studies. Most students/scholars (even those not in formal academic programs) are expected to stay in the United States for at least two years.

2. Exchange channels:

China's effort to send personnel to the United States consists, at present, of three main channels. The most important of these, at least in the first year, has been the Chinese government program (implemented primarily by the Ministry of Education and the Chinese Academy of Sciences), which has focused on sending the young and mid-career researchers for advanced training in science and technology. Secondly, because of funding constraints, the Chinese government has sought to supplement its major program by encouraging other researchers to seek opportunities to study abroad by securing financial support from American educational and research institutions. Finally, the Chinese government has displayed an encouraging attitude toward the efforts of younger individuals (including undergraduates) to study in the United States with the financial support of relatives or other private sponsors. There is no central organization or agency in the United States which places Chinese students/scholars in U.S. institutions. The closest thing to such a function is served by the Education Section of the Embassy of the People's Republic of China in Washington, DC, which seeks to place the Chinese-government sponsored students/scholars *in the institutions of the student's/scholar's preference* whenever possible. This preference is usually based on the informal advice provided to the student/scholar by senior colleagues, relatives or friends, or on information available in scholarly journals. These choices may be excellent if the sources of information are sound, but may often be less than optimal. There is a recognized need for more information on U.S. educational opportunities to be disseminated widely in China and the U.S.-China Education Clearinghouse is currently seeking ways of promoting the effective flow of such information.

Colleges and universities in the United States can expect to be approached about receiving Chinese students/scholars in the following ways: (a) the Chinese Embassy in Washington, DC may be seeking placement for individuals who have indicated their desire to be affiliated with that institution; (b) individual faculty members may be contacted by Chinese scholars in their fields (or by their professors, advisors or senior colleagues on their behalf) regarding their placement—these scholars may be receiving Chinese government support or may be seeking U.S. support; and (c) private American sponsors may be contacting colleges or universities on behalf of the prospective stu-

dent. American colleges and universities which have special ongoing ties with Chinese educational institutions or government agencies also, of course, receive students/scholars through those bilateral channels.

3. General characteristics of the students/scholars:

The bulk of the students and scholars can be expected to be affiliated with a college or university in China, or with a research institute of the Chinese Academy of Sciences or other government agency (such as the industrial ministries). Some may be technical personnel in a factory and some may not yet have begun their professional careers. While their interests may seem narrow by American standards (a function of the structure of academic and research institutions in China) and their exposure to advanced research (particularly experimental work with elaborate equipment) limited, there is no question that individuals sent to the United States are of very high caliber. The educational system in China is highly selective and the choice of participants to be sponsored for foreign study by the Chinese government reflects yet another stage of selection. Furthermore, the motivation of Chinese students/scholars is extremely high, partly as a result of social norms and partly as a result of China's current emphasis on scientific and technological achievement which, in concrete terms, represents substantial career opportunities for the scholars on their return to China. A sense of national mission is strong and widely shared by Chinese intellectuals.

The Clearinghouse has heard from many American institutions which have received PRC students/scholars that one prevailing academic weakness at this point is that of English language skills. While great efforts are currently being expended in China at teaching English in schools, in the workplace and through radio and television (efforts which are certain to show results before long), the experiences of the first year of exchange have been that, beyond the ability to read materials in their own field, most students and scholars require considerable supplementary instruction in conversational English.

B. EVALUATION OF CHINESE ACADEMIC CREDENTIALS

In addition to the common differences in the handling of academic credentials which may exist between any two countries, there are special problems which apply to the Chinese case. For one, the lack of communication between the United States and the People's Republic of China for nearly 30 years has accentuated the mutual unfamiliarity with each other's academic customs. Furthermore, the events of the Cultural Revolution produced a shambles in all manner of record-keeping in China and created great irregularities in the academic career patterns of individual Chinese. Many of these problems should diminish in time. For the present, however, U.S. institutions will have

to bear with some of these problems in accepting Chinese visitors. This is not to say that U.S. institutions should not keep requesting as much information as is available from China. It is possible to obtain detailed descriptions of courses taken and information about levels of English from teachers of Chinese students, and U.S. institutions are encouraged to request this information from applicants.

U.S. institutions are encouraged to follow normal admissions (or invitation) procedures as closely as possible when dealing with applications (or requests) from students (or scholars) in the People's Republic of China. Since none of the U.S. college entrance examinations, such as SAT's, GRE's, etc., or TOEFL, are presently administered in the People's Republic of China, institutions may have to determine the exact placement of Chinese students *after* their arrival. This may mean that a student is not accorded degree-seeking status until a semester's work and standardized test results are available for review. American institutions should continue to urge Chinese institutions to move toward a pattern of increasing compatibility with U.S. procedures in the handling of academic credentials.

The following outline of Chinese education patterns in various time periods is intended to assist admissions officers in requesting and assessing academic credentials from China.

1. Secondary schools:

Prior to 1966, the pattern of primary and secondary schooling in China was a 6-3-3 year system, with most children starting school at age seven. Lower middle schools and higher (senior) middle schools each had a three-year curriculum. Graduates of lower middle schools could choose either to enter senior middle schools or technical (vocational) middle schools—the latter a terminal program normally of three years' duration.

Many secondary schools were closed for a time between late 1966 and 1969; schooling at this level was quite irregular and records are, in many cases, nonexistent. Often the best that can be expected is for the student/scholar to reconstruct his/her chronological record of academic instruction.

When the educational system was reorganized in the early 1970's, the primary-secondary pattern became a 5-3-2 year system. Formal academic criteria for performance were virtually eliminated and records may reflect this. In general, academic records for this period are skeletal. School activities included considerable manual labor, political study meetings and other non-academic activities.

Since 1977, academic standards have been raised and a great deal of emphasis is being placed on preparation for college entrance (even though only about 5 percent of senior middle school students will eventually enter college). The need for presenting strong credentials

for college entrance has resulted in much greater emphasis on testing and the maintenance of formal records. The educational pattern remains a 5-3-2 year system, although in some areas it is a 4-3-2 year system, with indications that there is an interest in someday increasing the 10-year elementary/secondary period into an 11 or 12-year system. Since 1978, six has been the usual age for children to start school. The school year is approximately 40 weeks.

2. Colleges:

In the move to Taiwan of the Nationalist Chinese government in 1949 following its defeat, many educational records were moved to Taiwan. For this reason, some credentials received in the United States may bear the certification of educational authorities now in Taiwan for college work completed in China before 1949.

Standard college curricula from the early 1950's to 1966 were of five years' duration, although some four-year university programs did exist and programs such as medicine could cover seven or eight years after senior middle school. Competitive entrance examinations determined who was accepted.

For the early 1950's, some confusion may exist in academic records because of the reorganization (amalgamation and splitting) of institutions in the period from 1949 to around 1953, which may have resulted in some institutional name changes. After the reorganization, however, there was great stability until the onset of the Cultural Revolution in 1966. Credentials for this time period should, therefore, be rather complete (although such credentials may have been lost or destroyed during the turmoil of the Cultural Revolution).

From 1966 to 1971, all colleges were closed. There should therefore be no credentials from this period. Some "degrees" may have been granted for work begun before 1966, but they do not reflect any work done after the spring of 1966.

For the classes which entered institutions of higher education from the fall of 1971 (graduated in 1974) to the fall of 1976 (graduated in 1979), the curriculum was of three years' duration and included a great deal of political study, manual work and production-oriented training and little basic science. Students were recruited from their work units (after a minimum of two years of industrial or agricultural production work) on the basis of a system of recommendations which emphasized class origin (worker or peasant families) and political attitude. Little weight was attached to formal academic credentials and examinations were rarely used. Despite the anti-intellectual attitude which prevailed at the time and the fact that much resentment against this rebellious "politicized" generation of students is currently being expressed, there is evidence that some very bright students were se-

lected by their peers for college study in this time period. Such academic aptitude may be difficult to discern in academic records, however.

In assessing academic credentials from this period, admissions officers should be alert to the existence of "closet" scholars. These are the dedicated students who were able to study privately in their homes or worked in research institutes that managed to remain operational.

The college class which was selected in the late fall of 1977 (and actually entered college in the spring of 1978) will probably complete its studies in the spring of 1982, as on many campuses the students did some remedial work in the spring of 1978 prior to beginning the new four-year college curriculum. These students were selected on the basis of a restored college entrance examination which was standardized at the provincial (rather than national) level. Chinese sources have stated that "recommendation" still played a part in their selection, however, and that some students from other than worker or peasant backgrounds were discouraged from seeking college entrance.

The college system returned to full normalcy with the recruitment of students in the fall of 1978 directly from senior middle schools through a nationally standardized entrance examination system (described in detail below). The entrance examination is part of a general emphasis on formal academic evaluations. College curriculum is now set at four years, although in recent months there have been discussions of the possibility of extending it to five or even six years, at least in some fields and at certain institutions. If the four-year standard is maintained, the first "normal" college class will graduate in the spring of 1982.

3. Graduate education:

Graduate education was begun in China around 1956, and developed at a very modest pace. There was some discussion at that time about using graduate degrees along the Soviet pattern (doctorates and doctoral candidates – simply "associate doctorates" in Chinese), but it is not believed that such degrees were ever formally granted. Approximately 16,000 Chinese students completed such programs prior to 1966 and received certificates for this work. A considerable number of these graduate scholars were "enrolled" at research institutes of the Chinese Academy of Sciences and some of their credentials may have been issued by the Academy. It is not known whether any certificates were issued to persons who had only partially completed their graduate work by 1966. In the research institutes, it was likely that work did not come to an abrupt halt in 1966, as it did in colleges, and graduate work may have, therefore, been completed, at least in certain fields of science.

No formal graduate education was conducted between 1966 and the fall of 1978. Graduate programs were re-established in 1978, and are expected to be of at least three years' duration in most cases. The first new generation of scholars to have *completed* graduate work should, therefore, not be expected abroad until the spring of 1981. Overseas training, however, may be considered an integral part of the graduate programs of some students and graduate students currently enrolled in China are already coming to the United States.

4. Overseas education:

Although it is not expected that China would place too much emphasis on sending veterans of overseas education for a "second round" of advance work overseas (especially since those who have received overseas training did so prior to the early 1960's and are therefore already fairly senior), it is possible that a few scholars in this category might come to the United States for particularly specialized and advanced work for limited periods of time.

China sent about 8,000 trainees to the Soviet Union and to Eastern European countries between 1950 and 1963. U.S. institutions can rely on their familiarity with credentials from those countries in assessing any academic records received from applicants with this experience.

While the flow of students between mainland China and the United States stopped in 1949, it should be noted that a number of individuals who left mainland China before 1949 did not return to the People's Republic of China until the early or, in some cases, late 1950's.

A small number of individuals may have had the opportunity to pursue advanced work in Japan, Western European countries or Canada in the early 1970's and may therefore have academic credentials from institutions in those countries.

5. Special education:

Although it is unlikely that many persons sent overseas would have credentials from these types of institutions, in order to cover all contingencies, we should mention briefly special education programs in China. Secondary technical (vocational) schools have been mentioned previously. In addition, factories run part-time or full-time technical education programs generally termed worker's schools, or in some cases, "July 21st Universities." Some of these full-time programs last as long as three years. Their primary aim is to upgrade the technical skills of factory personnel. China also has many television and radio correspondence technical and language courses which were popular prior to the Cultural Revolution and have been restored on a large scale. All of these special educational programs have been widely used in recent times for foreign language training.

6. College entrance examinations:

Whenever relevant, admissions officers should request college entrance examination results from applicants. The newly restored examination system is described below in order to assist in the assessment of applications from China. In July 1978, university entrance exams were unified into one nationally-administered exam. Each student—nearly six million persons took the examinations to compete for the approximately 290,000 places available in 1978—listed his/her preferred major and three schools to receive his/her scores.

The examination itself was held simultaneously at testing centers widely scattered throughout China during the three-day period from July 20 through July 22. Each candidate took tests in at least five of the eight subjects offered, and many took six of the eight tests. All candidates were required to take the tests in three subjects—politics, Chinese language, mathematics; in addition, those candidates desiring to specialize in college in scientific and technological fields took the tests in both physics and chemistry, and those intending to specialize in the social science and humanities fields took the tests in history and geography; finally, all candidates except those who had not studied a foreign language were required to take a test in their choice of one of seven languages (English, Russian, French, German, Japanese, Spanish or Arabic).

Each of the tests except the one in Chinese language was designed to be completed in two hours (the Chinese language test was designed for 2½ hours), but candidates were allowed an additional half-hour to finish each test if they felt they needed this extra time. Thus each candidate was expected to spend a minimum of 10½ hours (12½ if he or she was taking a foreign language test) in the examination room within the three-day period.

The tests consisted of questions of varying complexity. Each question was individually value-weighted, and the total possible score on each subject test was 100 points.

The overall scoring system for the examination as a whole yielded, for each candidate, a single-figure total score (e.g., 283, 347, 416, etc.). This score represented the aggregate total points the examinee amassed on five 100-point tests. For most candidates, the five tests on which the overall score was based were politics, Chinese language, and mathematics plus either physics and chemistry (for science/technology candidates) or history and geography (for liberal arts, social science and humanities candidates). Thus for the great

majority of examinees, the score achieved on a foreign language test they might also have taken was not counted in the basic 500-point calculation, but was used "for reference purposes only" (a phrase whose precise meaning in this context was not clarified). For those candidates intending to specialize in the study of foreign language, however, the score on the foreign language test *was* counted in calculating their overall point total, and their score on the mathematics test was used only "for reference purposes."

Information on how many points an examinee had to achieve in order to be successful in the examination is not entirely clear. Apparently the "success" score varied, depending on the province or municipality in which the candidate lived and took the exam. From the data available, it would appear that the "cut-off" score varied in different areas from as low as 280 or so to as high as perhaps 370. In general, it seems that in most areas, in order to gain admittance as a full-time resident student to one of the regular colleges or universities, a candidate had to gain a total of at least 300 points out of 500 (or 60 percent). Indications were that a total point score of 380 or more was likely to be needed to gain acceptance by a major university. Evidently, there was no minimum "passing" score on *individual* subject tests—i.e., if (for example) a total score of 350 points was needed to be successful, an examinee could score 70 points on each of three tests and 85 points on one test, and could still qualify with a score of only 55 points on the fifth test.*

A few general comments by an admissions officer at a U.S. institution on some of the individual examinations follow.

Mathematics: Well organized; good quality; of the classical variety; no modern math; requires more recall than creative problem solving. *Physics:* Somewhat old fashioned, but roughly the equivalent of a U.S. high school introductory course with a sharper focus on the more fundamental aspects of physics. *Chemistry:* Similar to what was covered in the United States in the 1950's; not generally up to par with

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**The 1978 National College Entrance Examination in the People's Republic of China,* Robert D. Barendsen, Editor, U.S. Department of Health, Education and Welfare, Office of Education, Washington, DC, 1979, pp. 4-5. This publication, which includes translated texts of most of the examination questions and of the review outline, also features commentaries by American analysts on these materials. The book is available for $4.00 prepaid from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402; stock number 017-080-02049-1.

an eleventh grade course in the United States today. The equipment used and the experiments performed do not suggest a coverage of modern chemistry. *English:* Akin to two years of a foreign language course in a U.S. high school covering a vocabulary of 600-800 words; does not test oral/aural talent or skill at writing original composition; not a very advanced level; should not be considered an equivalent of a TOEFL for assessment of English language skills. *History:* Covers the span of Chinese and world history to the post-World War II period with emphasis on recent history; rather selective and reflecting a Marxist/Leninist point of view. *Politics:* Has no U.S. counterpart; emphasizes current and recent events in China; does not appear to encourage creative analysis by the students but rather a reproduction of what has been taught. (The Chinese may think of these exams as their version of the GCE "0" levels, but solid evidence to support this is lacking.)

Graduate level entrance examinations were also administered in 1978. Approximately 60,000 students took these exams, from which about 10,000 were selected. The exams were administered in two stages. A preliminary examination consisted of four basic parts: politics, foreign language, a basic subject and one of about 200 specialty subjects. This preliminary examination may have been nationally standardized. The second stage consisted of examinations administered by individual universities or institutes. The second examinations covered three main components: foreign language, basic subject and a specialty subject.

Texts of the college entrance examinations given in 1979 are not yet available in the United States. The basic format remained the same, however, as in 1978 except that the score of the foreign language exam was counted as 10 percent of the total examination score. How the total score is reported is not known. When definitive information about the 1979 exams becomes available, it will be disseminated by the Clearinghouse.

7. A brief profile of Chinese academic credentials:

The following information is based on a sampling of credentials received from the People's Republic of China in the last academic year by U.S. institutions.

Experience to date shows that most applicants from the People's Republic of China can provide fairly complete academic records, with English translations routinely included. Some may be copies of original school records; some appear to be careful reconstructions by a professor or a school official; and some apparently are prepared by other institutions where the applicant is now known based on knowledge of his/her prior educational records. These credentials are not certified in the way U.S. schools normally expect. It is, however, sug-

gested that for the present they be accepted at face value.

Grading scales seem to conform to one of three or four patterns all familiar to U.S. admissions officers. Samples received have included a 100-point scale, a 5-point scale (with 5 being the best grade), alphabetical A, B, C grades or descriptive titles such as "Excellent," "Fine," or "Q" (qualified) and "U" (unqualified). The translation of one record states courses were given on a "CR/NCR" (credit/no credit) basis. It has been learned that giving a low grade in China occurs only in extreme cases. However, the selectivity of the present educational system in the People's Republic of China indicates that most of the students who are applying to U.S. schools could well be in the top percentiles.

Some high school (senior middle school) records for study before 1966 have been received. These credentials give the subjects, grades and number of hours of study.

Credentials received which include a period of study during the Cultural Revolution (1966-76) clearly so designate, with some applicants stating that all their academic records were lost during this period. Such individuals should be asked to recreate their educational history as accurately and completely as possible. Work done at the graduate level during this period will be the hardest to track, since graduate instruction often took place at research institutes where there was no "official" coursework and no grades were recorded. Some persons have submitted to U.S. institutions an account of their research during this time period together with statements from their professors.

At the present time, the Chinese seem to be maintaining complete middle school and college records and are preparing transcripts reflecting this work. Several middle school graduation certificates received include the grades on the 1978 National College Entrance Examination, showing the actual scores on the five required exams and on the foreign language examination. The university to which the student was accepted in China is stated.

One undergraduate college transcript received from the first semester of 1978-79 gives the subjects, the number of hours per week and the grades, on an alphabetical grading scale. Another from an evening school for engineers and teachers notes the classes attended, absences, teachers' comments, the midterm and final exam in percentages and the final grade as "excellent."

It should be noted that U.S. educational terminology is already being used in the English translations of transcripts from the People's Republic of China. Care should be taken that the use of a U.S. term in the translation is not automatically equated with a U.S. academic event. For example, one record for a student applying to graduate school quotes grades on the "Graduate Record Exam," giving subject and letter grades. This refers to China's graduate entrance exam, not the U.S. Graduate Record Exam.

In requesting credentials, some U.S. terms may not be familiar to applicants from the People's Republic of China. It may be advisable to ask specifically for a list of courses taken and examination results and/or academic documents rather than simply "transcripts." Similarly a request for a certificate of completion of a course or program of study may be understood better than a request for a diploma. Admissions officers may find that the current employer of the applicant will be the one that provides the academic documents to the U.S. institution.

The following placement guidelines have been used provisionally by certain U.S. institutions until further experience is gained:

1. Students presenting high school graduation certificates after a ten-year primary-secondary program may be considered as having received the equivalent of a U.S. high school education.

2. Graduates of three-year college programs should not be considered eligible for graduate status, unless they were later enrolled as graduate students in China.

3. Students who completed five-year university programs before the Cultural Revolution should be considered eligible for U.S. graduate studies.

In regard to persons seeking research scholar status, U.S. institutions should make clear what the financial arrangements are when a "visiting research scholar" is accepted. Any fees to be charged need to be clearly outlined, such as audit fees, lab fees and computer usage fees.

8. English language ability:

On the basis of experience to date, the English language skills of students and scholars from China are very uneven but generally low as a result of shortages of properly trained English teaching personnel in China. This situation is likely to improve substantially over the next few years as a result of enormous efforts being expended in China on the teaching of English and other foreign languages. (For more on this point, see Section III. D. on English as a Second Language.)

The present problems are compounded by the fact that the assessment of English language skills *prior* to the students' and scholars' arrival in the United States is difficult. For the time being, Chinese educational authorities have not been receptive to the administration of the TOEFL or other tests in China. Scores provided on Chinese examinations are not a very useful guide for assessment, particularly in oral/aural skills. Some U.S. institutions have been able to interview potential exchangees in China prior to their acceptance. Where this has not been possible, several U.S. institutions have offered visitors conditional acceptance pending further assessment after arrival in the

United States. The applicant should, of course, be cautioned that some remedial training may be required on arrival and of the possible fees that may be required for such coursework.

C. VISA INFORMATION AND RELATED MATTERS

1. Visa application and issuance process:

Persons from the People's Republic of China who are applying to U.S. institutions for admission as a student or for a position as a visiting scholar follow the same procedures as other foreign nationals. The prospective student/scholar submits to the U.S. institution his/her credentials and proposed academic program (and application forms, if appropriate). The student/scholar also provides evidence of sufficient financial support to begin the pursuit of his/her academic program. This information is reviewed by the U.S. institution, and if it decides to receive the applicant, the institution then issues the appropriate Certificate of Eligibility and sends it to the student/scholar with a letter of acceptance or invitation.

The decision about which type of Certificate of Eligibility (I-20 or IAP-66, formerly known as DSP-66) is appropriate is made by the campus officer responsible for sending these certificates, and is based on the sponsorship of the visitor. Visitors sponsored privately should be issued an I-20 Certificate of Eligibility on the basis of which they receive an F-1 visa. Government or institution-sponsored students and scholars should be issued an IAP-66 Certificate of Eligibility on the basis of which they receive a J-1 (Exchange Visitor) visa.

When the Chinese student or scholar goes to the U.S. Embassy in Beijing (or to the U.S. Consulate in Guangzhou [Canton] or Shanghai – the latter is due to open in early 1980) to apply for an F-1 or J-1 visa, in addition to having a valid passport, two passport photographs and a valid IAP-66 or I-20, he/she should be certain to have an official statement indicating the availability of sufficient financial support (from either Chinese or U.S. sources) to begin the desired academic program.

Some American institutions have reported that letters received with applications from Chinese government-sponsored students or scholars requesting an IAP-66 are often the sole source of a formal statement that sponsorship is assured by a Chinese government agency or educational institution. In some cases, a prospective student or scholar has stated that the Chinese government would only issue an official letter of financial support after the student or scholar has received a valid IAP-66. However, in cases where a U.S. institution has pressed for the official financial statement prior to issuing the IAP-66, it has usually been received.

Careful scrutiny is given by U.S. consular officials to the affidavits of support from U.S. friends or relatives who sponsor private students. Foreign student advisers are advised to be certain of the sponsor's legitimate intent to make the funds available to the student/scholar. Unfortunately, the mistaken notion that a foreign student can easily earn his/her keep while a student exists in China as elsewhere. Prospective sponsors should be reminded of the restrictions placed on employment for students:

- For F-1 visas: full-time students can work on campus with the authorization of the foreign student adviser; to work off-campus, they must have the permission of the Immigration and Naturalization Service (INS) and this permission will only be granted if there has been an unforeseen change in the student's financial situation.
- For J-1 visas: full-time students may be employed on or off-campus with the authorization of the program sponsor.

To expedite the processing of Exchange Visitor Visas (J-1) by the Embassy in Beijing, the U.S. government has requested that, when an institution sends an IAP-66 to a Chinese student or scholar, copies of that IAP-66 be sent to the Consular Section of the U.S. Embassy in Beijing (Gung Hua Lu 17, Beijing, People's Republic of China or U.S. Embassy – Beijing, Department of State, Washington, DC 20520) and to the China Desk (EA/PRCM), Department of State, Room 4318A, Washington, DC 20520.

A May 29, 1979 memorandum from Mr. Paul A. Cook of the U.S. International Communication Agency (ICA/ECA/IPE) to Responsible Officers of Exchange Visitor Programs at U.S. institutions requested that the following information be attached to the duplicate copy of the IAP-66 sent to the China Desk (EA/PRCM) at the Department of State: "A brief description of the program of study or research which the student or scholar would pursue in the United States, including the scholarly objectives, principal methodologies or experimental apparatus to be employed, and the names of U.S. professors, study advisors, or collaborative researchers who would be involved in the program."

This supplementary information is reviewed, along with biographical information provided by the prospective student or scholar, by a governmental interagency committee on exchanges. One of the roles of that committee is to see that the student's or scholar's proposed research is in accordance with U.S. Department of Commerce regulations governing the export of highly refined technologies with industrial applications. As of November 1, 1979, no prospective Chinese student or scholar had been denied a visa on these grounds.

Currently, it takes the Chinese student/scholar approximately two months from receipt of the Certificate of Eligibility to be granted a

visa from the U.S. Embassy in Beijing. Specific questions on visa matters can be directed to the Visa Office, Department of State, 515 22nd Street, NW, Washington, DC 20520 (phone: 202/632-1972).

2. Pre-arrival arrangements and initial concerns:

Visiting *scholars* often spend several months studying English immediately prior to their arrival in the United States. In spite of this training, language skills on arrival may still be inadequate, especially in speaking and understanding, and may impede implementation of their academic program. Because scholars are currently not provided with funds to pay for further formal English training, alternative conversation and tutoring sessions organized by volunteers are likely to be welcomed by the scholars. For *students,* English proficiency minimum requirements must be clearly understood at admission, with contingency plans for intensive English study being part of the initial discussion with the sponsor.

Chinese students and scholars are accustomed to close affiliations with their institutions and have a strong cultural expectation that their American institution will take care of virtually all their needs. In receiving Chinese students and scholars on campus, American institutions should be sensitive to this expectation, particularly in regard to the question of who will oversee and advise their academic program, who will arrange for housing, who will arrange for medical care and insurance and the like. This sensitivity should also apply to each of the issues outlined below.

In anticipation of Chinese students'/scholars' arrivals, some foreign student advisers have formed a small working group interested in China to assist in logistical matters. This group can often provide initial home hospitality. A variety of modestly priced options for housing arrangements close to the campus or within easy commuting distance by public transportation or bicycle should be identified from which the student/scholar may choose. At the present time, dependents are not accompanying students and scholars. If possible, details about campus life and other orientation information should be sent to the student/scholar before he/she leaves China.

Notification of the exact arrival time of the Chinese government-sponsored student or scholar at the university is generally cabled from China or phoned from the Chinese Embassy in Washington, DC, often with little advance notice. Chinese custom stresses such points of hospitality as meeting visitors at airports and a newly arriving visitor can be assumed to expect such hospitality on the American side.

Foreign student advisers should expect, at least initially, to devote more time to the concerns of Chinese students than is required for most other foreign nationals and should plan a thorough orientation

to interpret campus life and prevailing social values to them, as their exposure to the West has been limited.

Many Americans have not been exposed to long-term visitors from the PRC and may be extremely anxious to meet and talk with Chinese students and scholars. It is therefore advisable to minimize the formal publicity of the arrival of these students and scholars until they become more familiar with campus life and American culture and society. Foreign student advisers should help in the timing and circumstances of encounters between the Chinese and Americans, especially between Chinese visitors and American journalists.

Currently, students and scholars from the People's Republic of China and from Taiwan appear eager to approach each other on American campuses on cordial or even friendly terms. In formal matters, however, it should be recognized that PRC students and scholars are likely to be very sensitive to the use of the term "Republic of China" in reference to Taiwan, and attention should be given to how official records, reports and other lists within the university describe country of origin or nationality.

Having Chinese students and scholars on campus may prompt visits by U.S. government security agents. Generally, inquiries by these agents have been directed to foreign student advisers and faculty working with Chinese scholars and most persons contacted have released only "Directory" information.

3. Financial matters:

Stipends currently received by Chinese government-sponsored students and scholars vary in amount but seem to average approximately $400 a month for scholars and $220 a month for students. Many American institutions have expressed concern about this low level, particularly in regard to high living costs in some geographic areas, the cost of insurance coverage and the need to cover such additional expenses as travel to professional meetings which may be an important aspect of the student's or scholar's academic program.

Some U.S. institutions have offered to supplement the stipend received from the Chinese government. In doing so, caution is advised, as Chinese officials might be inclined to reduce the Chinese government stipend, thus canceling the desired effect. Other U.S. institutions have begun to require high stipend levels as a condition of acceptance. The responsible officer of an exchange visitor program has the obligation to ensure that stipends agreed to prior to acceptance are in fact being provided.

The stipend payments of Chinese government-sponsored students and scholars are processed through the Chinese Embassy in Washington, DC. Any questions regarding schedules of remittance or adequacy of stipends should be addressed to Ms. Guo Yiqing or Mr.

Huang Zongxuan, Education Section, Embassy of the People's Republic of China, 2300 Connecticut Avenue, NW, Washington, DC 20008.

4. Insurance and medical care:

Medical insurance costs and expenses in China are generally very low. Most Chinese students and scholars are therefore unaware of the exorbitant medical costs in the United States and of the necessity for having adequate medical insurance. The responsibility of the individual to have adequate coverage is an unfamiliar concept to Chinese visitors and they therefore may question the need to pay for such coverage.

To keep insurance costs low, some foreign student advisers have made it possible for both Chinese students and scholars to register for the campus group coverage for students. Such costs should be specifically stipulated on the Certificate of Eligibility or in the accompanying letter so the sponsor in China will realize that funds to cover these costs must be provided. In addition to the official notification of acceptance to a U.S. institution, students and scholars may need written confirmation from the foreign student adviser about the costs of medical insurance. With this written confirmation, the scholar may be able to obtain additional funds through the Chinese Embassy. Private students and their sponsors also may need reminders of the importance of health insurance coverage.

5. Extensions of stay:

At the present time, most visas for Chinese entering the United States are stamped with a 212d3A28 classification, indicating the person is from a Communist country. Some of the visas have the additional notation, "Chinex." This is a designation similar to "Splex," which is used for students from the Soviet Union and Eastern European countries, and refers to inclusion under the education exchange agreement between the United States and the People's Republic of China.

Students and scholars who do *not* have the "Chinex" designation on their visas and who wish to apply for an extension of stay should request a new IAP-66 from the foreign student adviser. Once this has been obtained, the student/scholar takes the valid IAP-66 plus his/her expiring Arrival/Departure Record (I-94) to the nearest immigration office and applies for the extension of stay.

For students and scholars who *do* have the "Chinex" designation on their visas, the foreign student adviser should write to the China Desk, EA/PRCM, Department of State, Room 4318A, Washington, DC 20520 to ask permission to issue a new IAP-66 to the Chinese student/scholar for an extension of stay up to a specific date. The Department of State will then send the foreign student adviser a letter giving

authorization for the extension of stay for the Chinese student/scholar. Once this letter has been received, the student/scholar should take the letter with the original of the new IAP-66 and the expiring I-94 to the local Immigration and Naturalization Service (INS) office to apply for the extension of stay. The local INS office *must* have written notification from the Department of State before it can issue an extension of stay to a person with "Chinex" stamped on his/her visa. Once this letter is presented to the INS office, there will be no further delays in obtaining the extension of stay.

6. Travel to Canada or Mexico:

Most of the visas issued to Chinese students and scholars are single entry visas, although the Department of State is encouraging the Embassy in Beijing to begin issuing double entry visas when appropriate. Therefore, if a Chinese student or scholar whose visa is stamped 212d3A28 (with or without the "Chinex" designation) wishes to travel to Canada or Mexico to attend a professional meeting, for instance, and then return to the United States for continuation of study or research, the following procedures should be followed:

(a) The Chinese student or scholar should apply to the Canadian or Mexican Embassy or Consulate for a visa.

(b) The foreign student adviser should notify the Department of State of the intention of the Chinese student or scholar by sending the following information to the Visa Office (at the present time to the attention of Ms. Eleanor Harris), Department of State, 515 22nd Street, NW, Washington, DC 20520:

- name of the Chinese student or scholar;
- date and place of birth;
- U.S. institution presently attending;
- a description of the study/research being done at that institution;
- the dates of travel to Canada or Mexico;
- the city in Canada or Mexico where a U.S. Consulate is located which will be closest to the destination of the Chinese visitor;*

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*U.S. Consulates are located in the following cities:

Canada: Ottawa, Calgary, Halifax, Montreal, Quebec, Toronto, Vancouver and Winnipeg

Mexico: Mexico City, Guadalajara, Hermosillo, Monterrey, Tijuana, Ciudad Juarez, Matamoros, Mazatlan, Merida and Nuevo Laredo

- the length of time the Chinese visitor will be remaining in the United States upon return; and,
- a photocopy of the student's/scholar's visa.

(c) The Visa Office will then send a letter to the appropriate U.S. Consulate stating that the Chinese visitor has authorization to re-enter the United States.

(d) When the Chinese student or scholar travels to Canada or Mexico, he/she must be certain to take two or three passport photos and a valid IAP-66, as he/she must apply for a new visa at the most convenient U.S. Consulate for re-entry into the United States.

(e) If the Chinese student or scholar has any difficulty in obtaining a visa for Canada or Mexico, the foreign student adviser should, at the present time, call Ms. Eleanor Harris at 202/632-2949.

D. ENGLISH AS A SECOND LANGUAGE (ESL)

1. English levels of Chinese students and scholars in the United States:

Relatively little systematic information has been gathered to date regarding the English level of Chinese students and scholars in the United States. For the *students,* problems in oral/aural skills appear widespread, particularly in situations when two Americans are talking to each other or in classroom and seminar presentations, rather than in face-to-face conversations.

As to *scholars,* the experience thus far suggests that they present fewer problems. Where shortcomings exist, however, the main problem which has arisen is that the scholars are not given funds to cover the expense of further training. If this situation cannot be resolved by the hosting institution, the problem should be raised with the Chinese Embassy and/or with the sponsoring institution in China.

(More systematic information about English levels of Chinese students and scholars currently in the United States is being collected by the Clearinghouse; that information will be reported as soon as it becomes available.)

2. English testing in China:

At the present time, neither the TOEFL nor the ALIGU test is being administered in China. The Chinese do administer a special English test for students/scholars planning to come to the United States for study or research. A translation of the test given in 1978 is currently being prepared and will be made available soon.* A note of

*It is being edited for publication, with a brief explanatory introduction by Dr. Robert D. Barendsen of the U.S. Office of Education.

caution is that the Chinese sometimes indicate having taken a "TOEFL," but this refers only to the special English test prepared by the Chinese, not the actual TOEFL program examination.

Because of prior testing in China, Chinese students and scholars in the United States may be somewhat resistant to taking another English proficiency examination. The need for the test results must, therefore, be carefully explained.

3. Teaching of English in China:

The teaching of English in China begins at the elementary school level, but there is a shortage of trained English teachers. Some of those now filling such roles had crash training programs of as brief as three months, and the ratio of teachers to students can be as high as 1:100. Students of English at the university level have been trained in classical literature with minimal emphasis on oral/aural skills.

Chinese educational authorities recognize the need for more efficient English language training and realize that it is less expensive to provide necessary training in China rather than sending their students to the United States for their language work. China is currently negotiating with several U.S. institutions about establishing ESL centers in China, and the U.S. International Communication Agency and the U.S. Office of Education are planning activities in this area as well.

In the meantime, China is recruiting a number of American ESL teachers to teach in China through the Embassy of the People's Republic of China in Washington, DC. Individuals interested in ESL positions in China should write to: Bureau of Foreign Experts, Beijing, People's Republic of China, to the Foreign Affairs Department, Ministry of Education, Beijing, People's Republic of China, or to particular educational institutions in China with which they would like to be affiliated. A detailed resumé and ESL teaching credentials and experience should be included. Copies of all correspondence should be sent to the Education Section, Embassy of the People's Republic of China, 2300 Connecticut Avenue, NW, Washington, DC 20008.

E. OPPORTUNITIES FOR AMERICAN SCHOLARS AND STUDENTS IN CHINA

1. General access to China:

While exchange visits of an official or semi-official nature have received most of the attention in reports on the development of scholarly communication between the United States and China, a rapidly increasing number of significant ties have been sparked by initial contacts made by Americans on unofficial and touristic visits to China. There are considerable bureaucratic and logistical constraints on

making such contacts but these difficulties are often eased by the prevailing eagerness of China's scholars to meet with foreign colleagues. Except for Americans of Chinese descent and selected special guests, most Americans who go to China are still confined to traveling with groups. Within group travel, however, enterprising individuals have met with some success in meeting briefly with Chinese scholars by asking their guides to help arrange such meetings. Three major types of opportunities for unofficial travel to China are outlined below.

(a) **Package Tours:** Various airlines, such as Pan American and Japan Airlines, and steamship companies are offering two to three-week tours of China. The options are numerous and constantly expanding and details are best secured through a travel agent. Major agents arranging tours directly include Travel Headquarters, Inc. (21 LaFayette Circle, LaFayette, CA 94549, phone: 415/283-5400); Lindblad Travel (8 Wright Street, Westport, CT 06880, phone: 203/450-3595); and Special Tours for Special People (205 West 57th Street, New York, NY 10019, phone: 212/586-6577), which specializes in organizing groups according to specific professional interests.

(b) **China International Travel Service (CITS):** The official Chinese travel agency currently provides two basic options. The most immediate is available to persons traveling through Hong Kong. The CITS arranges frequent tour groups from Hong Kong (especially to South China locations such as Guangzhou, Gueilin and Nanning) either directly at their Hong Kong office or through several Hong Kong travel agents. Applications are made in Hong Kong and require only a few days for processing. The second option is for special interest groups with a professional focus, for instance, to apply to the CITS from the United States. This can be done either by writing to the CITS, known in Chinese as LUXINGSHE (Changan Street, Beijing, People's Republic of China) or by applying at the Embassy of the People's Republic of China (2300 Connecticut Avenue, NW, Washington, DC 20008). The proposal should include data on the group members (age, sex, occupation and nationality), point of entry and length of visit, desired itinerary and an assessment of the Chinese language proficiency of the group (to allow the CITS to allocate a desirable number of interpreters). Response may be very slow but the results are obviously likely to be more rewarding than some of the other options.

(c) **U.S.-China People's Friendship Association (USCPFA):** In addition to providing tours for its own members, the USCPFA

operates a large program of "study tours" (relatively unfocused, although special visits in China may be requested) and "special interest tours" (organized around one field such as health care, education, or sports). For more information, contact the USCPFA, 635 South Westlake, Room 202, Los Angeles, CA 90057.

For extensive and in-depth visits, teaching, research and other scholarly exchanges, American groups and institutions and individual scholars are advised to deal directly with China's institutions of research and higher education and with Chinese professional societies.

2. Teaching opportunities in China:

China's shortage of teaching personnel in relation to current goals has created a number of opportunities in several areas for qualified foreign teachers. Instructors of English and other foreign languages and teachers in various areas of science and the performing arts are being hired by agencies of the Chinese government for both short and long-term positions.

Persons interested in short-term positions (less than two years) should write directly to the Foreign Affairs Department, Ministry of Education, Beijing, People's Republic of China or to the particular educational institution in China with which they wish to be affiliated. A copy of all correspondence should be sent to the Education Section (or to the Science and Technology Section, if appropriate), Embassy of the People's Republic of China, 2300 Connecticut Avenue, NW, Washington, DC 20008.

Applicants for longer term positions (minimum of two years) should write to the Foreign Experts Bureau, Beijing, People's Republic of China. Persons interested in teaching positions in the *performing arts* should write to Ms. Yu Huijun, Director of Foreign Affairs, Department of Education, Ministry of Culture, Beijing, People's Republic of China. Again, a copy of the correspondence should be sent to the Chinese Embassy in Washington, DC.

All applicants should include a detailed resumé, indicating teaching or work experience and the subjects they wish to teach in China. No American agency, either private or governmental, is currently managing or facilitating teaching programs other than the limited efforts in English language teaching noted in Section III. D. 3.

3. Lecturing in China:

In the past few months, scholarly institutions in China have shown great interest in having foreign scholars lecture for several weeks and even longer in their fields of expertise. Often these institutions have covered all expenses in China for the lecturers (and sometimes their spouses), including a small amount of tourism, but they do not

support international travel or pay honoraria. There are currently no *major* American funding programs to support such travel. The Committee on Scholarly Communication with the People's Republic of China may run a small, individual short-term visitors program in 1981 (for details, see CSCPRC Programs). Persons interested in lecturing in China should express their interest in writing and submit their credentials both to the Chinese Embassy in Washington and to a relevant institution in China. For scientific and technical matters, letters to the Embassy should be addressed to:

Mr. XU Zhaoxiang*
Counselor for Science and Technology
Embassy of the People's Republic of China
2300 Connecticut Avenue, NW
Washington, DC 20008

For other matters dealing with major universities in China, letters should be addressed to:

Ms. GUO Yiqing
Education Section
Embassy of the People's Republic of China
2300 Connecticut Avenue, NW
Washington, DC 20008

Institutions which may be contacted in China as potential hosts include universities (see the list of "key" universities in Appendix A or B), research institutes of the Chinese Academy of Sciences (CAS), the Chinese Academy of Social Sciences (CASS), the Chinese Academy of Medical Sciences and the Chinese Academy of Agricultural and Forestry Sciences, or professional societies (see Appendices C and D for CAS and CASS institutes). Response times range from immediate to several months. If you are in doubt as to which institution is appropriate, you may write to Mr. Xu at the Embassy or to the CSCPRC staff. You may also write to the following organizations in China, although the response may be very slow:

Mr. HAO Ting
Director, Foreign Affairs Bureau
Chinese Academy of Sciences
Beijing, People's Republic of China

Mr. JIANG Nanxiang
Minister, Ministry of Education
Beijing, People's Republic of China

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*Chinese surnames come first and are shown here in capital letters.

Mr. HUANG Kunyi
International Department
State Science and Technology Commission
Beijing, People's Republic of China

Madame WANG Zheng
International Department
Scientific and Technical Association of the PRC
Beijing, People's Republic of China

Mr. SUN Yaming
International Department
Chinese Academy of Social Sciences
Beijing, People's Republic of China

Mr. LUO Ling
Director, Foreign Affairs Bureau
Chinese Academy of Medical Sciences
Beijing, People's Republic of China

Mr. JIN Shanbao
President
Chinese Academy of Agricultural Sciences
Beijing, People's Republic of China

4. Research and study programs:

While a number of individual American educational institutions and professional societies are now developing their own programs for research and study in China, the major nationwide scholarly exchange programs are those of the Committee on Scholarly Communication with the People's Republic of China (CSCPRC), which have been underway for several years, and the programs of various U.S. government agencies, which are being developed following the establishment of diplomatic relations with the PRC in 1979.

(a) **Committee on Scholarly Communication with the People's Republic of China:** The CSCPRC is jointly sponsored by the National Academy of Sciences (where its offices are located), the Social Science Research Council and the American Council of Learned Societies, and is supported by multiple government and private sources.

- **Delegations and Symposia:** Since 1972, the CSCPRC has conducted a scholarly exchange program with the Scientific and Technical Association of the People's Republic of China (STAPRC) in the natural and medical sciences, engineering, the social sciences and the humanities. From 1972 through 1979, the CSCPRC has sent 35

American delegations to China and hosted the visits of 42 Chinese delegations in the U.S. These delegation survey visits involve a one-month trip by approximately ten persons concentrating in a specific scholarly field. In 1979, the CSCPRC inaugurated a scholarly symposium program which has provided short-term group visits greater depth and focus.

Each American delegation has written a report which was published by the National Academy of Sciences or other publishers. Detailed information on the CSCPRC's delegation and symposium programs from 1972 to 1979 is available from the CSCPRC.

In 1980, the delegation and symposium programs will continue. The fields of exchange are currently under discussion, and will be announced by the CSCPRC in late January 1980. As in the past, American participants in these programs will be selected through a peer nomination process.

- **National Educational Exchange Program for Advanced Training and Research:** In October 1978 the U.S. and Chinese governments agreed to an exchange of students and scholars. To administer the U.S. program, the U.S. government requested the CSCPRC to begin selection of two groups of students and scholars to enter China in the spring and fall of 1979, respectively. Participants in this program were chosen through open competitions in the late fall of 1978 and early 1979. Twelve people were selected for the first group and 49 for the second. Selections for the third phase of the program in which participants will enter China in the 1980-81 academic year are in progress and will be announced in April 1980.

  The *Advanced Training Program* offers opportunities for one year of advanced language training at the Beijing Language Institute and course work at a Chinese university. It is intended primarily for graduate students and recent recipients of advanced degrees. Applicants must have studied modern standard Chinese for at least three years and be able to pass a language qualifying test administered by the CSCPRC.

  The *Research Program* provides grants for research in China of six months to one year in the social sciences and humanities and three months to one year in the sciences. It is intended primarily for graduate students and advanced scholars. There is no *a priori* Chinese language

requirement as the need for language skills is a function of the nature of the proposed project.

The minimum requirements for both programs are receipt of a bachelor's degree and current enrollment in an advanced degree program, or receipt of an advanced degree. At present, the CSCPRC does *not* administer a program for sending undergraduate students to China.

- **Senior Scholar Research Program:** As a result of an agreement reached in October 1978, the CSCPRC and STAPRC will exchange 15 scholars of distinction in fields to be designated by the sending side. For the American Senior Scholars, the grants offered by the CSCPRC are from three months to one year. The 15 scholars will carry out their research in China during 1979 and 1980 and were chosen in an open competition in the spring of 1979. Future phases of this program will most likely be subsumed under a short-term exchange program for individuals (see below).

- **Lecturer Program:** Under its October 1978 agreement with the STAPRC, the CSCPRC has agreed to send 30 American scholars to lecture in different institutions of higher learning in China and to host the visits of 10 Chinese lecturers during 1979-80. The names of the 30 Americans were submitted to the CSCPRC by the STAPRC and therefore, under this program, the sending side does *not* select its participants and the program is *not* open for competition at present. The lecture visits range from two weeks to several months.

- **Future programs for individual scholars:** It is expected that beginning in late 1980, the CSCPRC will initiate a short-term exchange program for individual scholars, combining some of the features of the current Lecturer and Senior Scholar Exchange Programs. The CSCPRC expects to announce details of this new program in early March 1980.

For more specific additional information on CSCPRC programs, please *write* to CSCPRC, National Academy of Sciences, 2101 Constitution Avenue, Washington, DC 20418.

(b) **U.S. Government Bilateral Agreements:** In the past year, several U.S. government agencies have negotiated bilateral agreements with Chinese government ministries for exchange of personnel, information and equipment. These understandings may

involve opportunities for research, teaching and study. In general, they stipulate an exchange of scientists, specialists and technical information; coordination of scientific research projects; seminars, conferences and lecture programs; and other appropriate joint programs.

Names and addresses of coordinators in the various government agencies who are administering the bilateral agreements are listed in Appendix I. These offices may be contacted for further information.

Appendix A

KEY COLLEGES AND UNIVERSITIES AND THEIR AFFILIATIONS BY SPECIALIZATION

The following is a list of 89 colleges and universities in China which have been designated as key institutions. They are grouped by type and/or subject of specialization. Their main institutional affiliations are indicated, as is their location when the city in which they are located is not included in the name of the institution. In a few cases where the city is not well known, the province in which the city is located is indicated in parentheses. Question marks indicate that the prccise location of the institution is not known or the institutional affiliation is not certain. Because of the transition from the old system of phoneticization to the current *pinyin* system, old spellings which are very different are indicated in parentheses. In many cases, several translations of institutional names are possible. The names shown below are based on a common standard. For alternatives, please consult the alphabetical list of institutions.

Comprehensive Universities *(Science and Liberal Arts):*

(The following are administered by the Ministry of Education)

Beijing University
Fudan University, Shanghai
Jilin University, Changchun
Nankai University, Tianjin (Tsientsin)
Nanjing University
Wuhan University
Zhongshan University, Guangzhou (Canton)
Chinese People's (Renmin) University, Beijing

(The following are believed to be run by provincial-level governments)

Sichuan University, Chengdu
Shandong University, Jinan (Tsinan)
Lanzhou University, Lanzhou
Xiamen (Amoy) University
Yunnan University, Kunming
Northwest University, Xi'an
Xiangtan University, Xiangtan (Hunan Province)
Xinjiang (Sinkiang) University, Urumqi
Nei Monggol (Inner Mongolia) University, Hohhot

Polytechnic Universities

(The following are administered by the Ministry of Education)

Qinghua (Tsinghua) University, Beijing
Xi'an Jiaotong (Chiao-t'ung) University
Tianjin (Tientsin) University
Dalian (Talien) Engineering College
Nanjing Engineering College
Beijing Engineering College
South China Engineering College, Guangzhou
Central China Engineering College, Wuhan
Chongqing (Chungking) University
Tongji (Tung-chi) University, Shanghai

(The following institutions are of uncertain affiliation)

Changsha Engineering College (Seventh Ministry of Machine-building?)
Northwest Industrial University, Xi'an (Seventh Ministry of Machine-building?)
East China Engineering College, Shanghai (Fourth Ministry of Machine-building?)
Haerbin Industrial University (not known)

Science Universities *(Chinese Academy of Sciences)*

Zhejiang (Chekiang) University, Hangzhou
Chinese University of Science and Technology, Hefei

Machine-building Colleges *(First Ministry of Machine-building)*

(With the creation in 1979 of a separate Ministry of Agricultural Machinery, the agricultural machinery colleges may be under the administration of that new ministry)

Jilin Industrial University, Changchun
Northeast Heavy Machinery College, Shenyang
Hunan University, Changsha
Zhenjiang Agricultural Machinery College
Hefei Industrial University, Hefei
North China Agricultural Mechanization College, Beijing

Shipbuilding Colleges *(Sixth Ministry of Machine-building)*

Shanghai Jiaotong (Chiao-t'ung) University
Haerbin Shipbuilding College

Aeronautics Colleges *(Seventh Ministry of Machine-building)*

Beijing Aeronautical Engineering College
Nanjing Aeronautical Engineering College

Electronics and Telecommunications Colleges

(Fourth Ministry of Machine-building)
Chengdu Telecommunications Engineering College
Northwest Telecommunications Engineering College, Xi'an

(Ministry of Post and Telecommunications)
Beijing Post and Telecommunications College

Light Industry Colleges *(Ministry of Light Industry)*
Shanghai Textile Engineering College
Northwest Light Industry College, Xi'an (?)

Construction Colleges *(State Capital Construction Commission)*
Chongqing (Chungking) Construction Engineering College (?)
Hubei Construction Industry College, Wuhan

Transportation Colleges *(Ministry of Communications)*
Dalien Maritime College
Northern Jiaotong (Chiao-t'ung) University, Beijing
Southwest Jiaotong (Chiao-t'ung) University, Chengdu

Mining and Metallurgy Colleges

(Ministry of Metallurgy)
Beijing Iron and Steel College
Northeast Engineering College, Shenyang
Central South Mining and Metallurgical College, Changsha

(Ministry of Coal Industry)
Sichuan Mining College, Chengdu
Fuxin Coal Mining College (Liaoning Province)

Chemical and Petroleum Engineering Colleges

(Ministry of Petroleum Industry)
East China Petroleum College, Shanghai
Beijing Chemical Engineering College (?)
Daqing (Ta-ch'ing) Petroleum College

(Ministry of Chemical Industry)
Guandong Chemical Engineering College, Guangzhou
Shanghai Chemical Engineering College

Electric Power Colleges *(now separate Ministries of Water Conservancy and of Electric Power)*

East China Water Conservancy College, Shanghai
Wuhan Hydroelectric Power College
Hebei Electric Power College, Shijiazhuang

Geology Colleges *(State Bureau of Geology)*

Wuhan Geological College
Changchun Geological College

Meteorology College *(State Bureau of Meteorology)*

Nanjing Meteorological College

Oceanography College *(State Bureau of Oceanography)*

Shandong Oceanographic College, Qingdao

Agricultural and Forestry Colleges *(now separate Ministries of Agriculture and Forestry)*

North China Agricultural University, Zhuoxian (Hebei Province)
Yunnan Forestry College, Kunming
Jiangxi (Kiangsi) Communist Labor University
Dazhai (Ta-chai) Agricultural College

Normal Colleges *(Ministry of Education)*

Beijing Normal College
Shanghai Normal College

Medical Colleges *(Ministry of Public Health)*

Beijing College of Chinese Medicine
Beijing Medical College
Shanghai No. 1 Medical College
Zhongshan (Chungshan) Medical College, Guangzhou
Sichuan Medical College, Chengdu

Miscellaneous Colleges

Beijing Foreign Languages Institute
Wuhan Surveying and Cartography College
Shanghai Foreign Languages Institute
Southwest Political and Law College, Chongqing
Beijing Foreign Trade College
Central Music College, Beijing
Beijing Physical Culture College
Central Nationalities College, Beijing

Appendix B

KEY COLLEGES AND UNIVERSITIES AND THEIR AFFILIATIONS: ALPHABETICAL LIST

The following is an alphabetical list of the 89 colleges and universities in China which have been designated as "key" institutions. Because of the transition from the old system of phoneticization to the current *pinyin* system, and because of alternative possible translations in English of certain Chinese names, cross references are provided. When the city in which the institution is located is not part of its name, the city is listed after the name of the institution. In a few cases where the name of the city is not well known, the province in which the city is located is indicated in parentheses. In addition, the main institutional affiliation of each institution is provided, using the following abbreviations:

CAS:	Chinese Academy of Sciences
M(name):	Ministry of (name)
MOE:	Ministry of Education
MPH:	Ministry of Public Health
(Nth)MMB:	(Nth) Ministry of Machine-building
SB(name):	State Bureau of (name)

A question mark indicates that the affiliation is not known for certain.

Institution	Affiliation
Amoy University see Xiamen University	
Beijing Aeronautical Engineering College	7thMMB
Beijing Chemical Engineering College	M Petroleum Industry (?)
Beijing College of Chinese Medicine	MPH
Beijing Engineering College	MOE
Beijing Foreign Languages Institute	MOE
Beijing Foreign Trade College	M Foreign Trade
Beijing Industrial College see Beijing Engineering College	

Institution	Affiliation
Beijing Institute of Post and Telecommunications see Beijing Post and Telecommunications College	
Beijing Institute of Technology see Beijing Engineering College	
Beijing Iron and Steel College	M Metallurgy
Beijing Medical College	MPH
Beijing Normal College	MOE
Beijing Physical Culture College	Physical Culture Commission
Beijing Post and Telecommunications College	M Post and Telecommunications
Beijing University	MOE
Canton see Guangzhou	
Central China Engineering College	
Central China Industrial College see above	
Central China Institute of Technology see above	
Central Music College, Beijing	M Culture
Central Nationalities College, Beijing	Nationalities Commission
Central South Mining and Metallurgical College, Changsha	M Metallurgy
Changchun Geological College	SB Geology
Changsha Engineering College	MOE (?)
Changsha Institute of Technology see above	
Chekiang see Zhejiang	
Chengdu Institute of Telecommunications see below	
Chengdu Telecommunications College	4th MMB
Chenchiang see Zhenjiang	
Chengtu see Chengdu	

Institution	Affiliation
Chiao-t'ung see Shanghai, Southwest or Xi'an Jiaotong	
Chinese People's University, Beijing	MOE
Chinese University of Science and Technology, Hofei	CAS
Chongqing Construction Engineering College	State Capital Construction Commission (?)
Chongqing University	MOE
Chungking see Chongqing	
Chungshan see Zhongshan	
Dairen see Dalian	
Dalian Engineering College	MOE
Dalian Industrial College see above	
Dalian Institute of Technology see above	
Dalian Maritime College	M Communications
Daqing Petroleum College	M Petroleum Industry
Dazhai Agricultural College	M Agriculture
Dongbei see Northeast	
Donghua see East China	
East China Engineering College	MOE (?)
East China Petroleum College, Shanghai	M Petroleum Industry
East China Water Conservancy College, Shanghai	M Water Conservancy
Fudan University, Shanghai	MOE
Fu-hsin see Fuxin	
Futan University see Fudan University	

Institution	Affiliation
Fuxin Coal Mining College (Liaoning Province)	M Coal Industry
Guangdong Chemical Engineering College	M Chemical Industry
Haerbin Industrial University	MOE (?)
Haerbin Shipbuilding College	6thMMB
Hebei Electrical Power College, Shijiazhuang	M Electric Power
Hefei Industrial University (Anhui Province)	1st MMB
Hofei see Hefei	
Hopei see Hebei	
Hsiang-t'an see Xiangtan	
Hsibei see Northwest	
Hsinan see Southwest	
Huabei see North China	
Huachung see Central China	
Huanan see South China	
Huazhong see Central China	
Hubei Construction Industry College	State Capital Construction Commission
Hunan University, Changsha	1stMMB
Inner Mongolia see Nei Monggol	
Jiangxi Communist Labor University	M Agriculture
Jilin Industrial University	1stMMB
Jilin University, Changchun	MOE
Kiangsi see Jiangxi	

Institution	Affiliation
Kirin see Jilin	
Kuang-tung see Guangdong	
Lanchow see Lanzhou	
Lanzhou University	MOE
Nanjing Aeronautical Engineering	7thMMB
Nanjing Engineering College	MOE
Nanjing Industrial College see above	
Nanjing Institute of Technology see above	
Nanjing Meteorological College	SB Meteorology
Nanjing University	MOE
Nankai University, Tianjin	MOE
Nanking see Nanjing	
Nei Monggol University, Hohhot	MOE
North China Agricultural Mechanization College, Beijing	M Agricultural Machinery
North China Agricultural University, Zhuoxian (Hebei Province)	M Agriculture
Northeast Engineering College, Shenyang	M Metallurgy
Northeast Heavy Machinery College	1stMMB
Northeast Industrial College see Northeast Engineering College	
Northeast Institute of Technology see Northeast Engineering College	
Northern Jiaotong University, Beijing	M Communications
Northwest Industrial University, Xi'an	7thMMB (?)
Northwest Light Industry College, Xi'an (?)	M Light Industry

Institution	Affiliation
Northwest Telecommunications Engineering College, Xi'an	4thMMB
Northwest University, Xi'an	MOE
Peking see Beijing	
People's University see Chinese People's University	
Qinghua University, Beijing	MOE
Renmin University see Chinese People's University	
Shangtung see Shandong	
Shandong Oceanographic College, Qingdao	SB Oceanography
Shangdong University, Jinan	MOE
Shanghai Chemical Engineering College	M Chemical Industry
Shanghai Foreign Languages Institute	MOE
Shanghai Jiaotong University	6thMMB
Shanghai Normal University	MOE
Shanghai No. 1 Medical College	MPH
Shanghai Textile Engineering College	M Light Industry
Sian see Xi'an	
Sichuan Medical College, Chengdu	MPH
Sichuan Mining College, Chengdu	M Coal Industry
Sichuan University, Chengdu	MOE
Sinkiang see Xinjiang	
South China Engineering College, Guangzhou	MOE
South China Industrial College see above	

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Institution	Affiliation
South China Institute of Technology see above	
Southwest Jiaotong University, Chengdu	M Communications
Southwest Political and Law College, Chongqing	(?)
Sun Yat-sen University see Zhongshan University	
Ta-lien see Dalian	
Tianjin University	MOE
Tientsin see Tianjin	
Tongji University, Shanghai	MOE
Tsinghua see Qinghua	
T'ung-chi University see Tongji University	
Wuhan Geological College	SB Geology
Wuhan Hydroelectric Power College	M Electric Power
Wuhan Surveying and Cartography College	SB Surveying and Cartography
Wuhan University	MOE
Xiamen University	MOE
Xi'an Jiaotong University	MOE
Xiangtan University (Hunan Province)	MOE
Xinjiang University, Urumqi	MOE
Yunnan Forestry College	M Forestry
Yunnan University, Kunming	MOE
Zhejiang University, Hangzhou	CAS
Zhenjiang Agricultural Machinery College	M Agricultural Machinery
Zhongshan University, Guangzhou	MOE

Appendix C

INSTITUTIONS OF THE CHINESE ACADEMY OF SCIENCES BY LOCATION

The following are the research institutes of the Chinese Academy of Sciences arranged by location. Local branches of the Academy may also run a number of smaller and less prestigious research institutes which are not listed here. In addition, the Academy runs libraries, universities, factories, and a few other units listed at the end of the list of research institutes.

Beijing

- Institute of Mathematics
- Institute of Mechanics
- Institute of Physics
- Institute of High Energy Physics
- Institute of Theoretical Physics
- Institute of Acoustics
- Institute of Chemistry
- Institute of Chemical Engineering and Metallurgy
- Institute of Photochemistry
- Institute of Environmental Chemistry
- Beijing Astronomical Observatory
- Institute of Geography
- Institute of Atmospheric Physics
- Institute of Vertebrate Paleontology and Paleoanthropology
- Institute of Geophysics
- Institute of Geology
- Institute of Biophysics
- Institute of Microbiology
- Institute of Genetics
- Institute of Psychology
- Institute of Zoology
- Institute of Botany
- Institute of Computer Technology
- Institute of Electronics
- Institute of Semiconductors
- Institute of Automation
- Institute of Electrical Engineering
- Institute of Atomic Energy
- Institute of the History of Natural Sciences

Shanghai

- Institute of Nuclear Research
- Institute of Organic Chemistry
- Institute of Silicate Chemistry and Technology
- Shanghai Astronomical Observatory
- Institute of Biochemistry
- Institute of Materia Medica
- Institute of Cell Biology
- Institute of Physiology
- Institute of Plant Physiology
- Institute of Entomology
- Institute of Metallurgy
- Institute of Optics and Precision Instruments
- Institute of Technical Physics

Hofei, Anhui Province

Institute of Optics and Precision Instruments
Institute of Plasma Physics

Chengdu, Sichuan Province

Institute of Organic Chemistry
Institute of Geography
Institute of Biology
Institute of Photoelectric Technology

Nanjing, Jiangsu Province

Purple Mountain Astronomical Observatory
Institute of Geology and Paleontology
Institute of Pedology (Soils)

Kunming, Yunnan Province

Institute of Cosmic Ray
Yunnan Astronomical Observatory
Institute of Zoology
Institute of Botany
Institute of Tropical Plants

Guangzhou, Guangdong Province

Institute of Chemistry
Institute of Oceanography for the South China Sea
Institute of Botany
Institute of Electronic Technology
Institute of Energy Research

Changchun, Jilin Province

Institute of Physics
Institute of Applied Chemistry
Institute of Geography
Institute of Optics and Precision Instruments

Shenyang, Liaoning Province

Institute of Metals Research
Institute of Forestry and Pedology
Institute of Computer Technology
Institute of Automation

Luda, Liaoning Province

Institute of Chemical Physics

Wuhan, Hubei Province

Institute of Physics
Institute of Virology
Institute of Botany
Institute of Hydrobiology
Institute of Survey and Geophysics

Lanzhou, Gansu Province

Institute of Modern Physics
Institute of Chemical Physics
Institute of Glaciology and Cryopedology
Institute of Deserts
Institute of Plateau Atmospheric Physics
Institute of Geology

Wulumuqi (Urumqi), Xinjiang (Sinkiang) Uigur Autonomous Region

Institute of Physics
Institute of Chemistry
Institute of Biology, Pedology and Deserts
Institute of Geography

Xi'an, Shaanxi Province

Institute of Optics and Precision Instruments
Institute of Space Physics
Shanxi Astronomical Observatory

Fuzhou, Fujian Province
Institute for the Structure of Matter

Qingdao, Shandong Province
Institute of Oceanography

Luancheng County, Hebei Province
Luancheng Institute of Agricultural Modernization

Taiyuan, Shanxi Province
Institute of Carbon Chemistry

Guiyang, Guizhou Province
Institute of Geochemistry

Haerbin, Heilongjiang Province
Institute of Precision Instruments
Heilongjiang Institute of Agricultural Modernization

Changsha, Hunan Province
Institute of Earth Structure

Taoyuan County, Hunan Province
Taoyuan Institute of Agricultural Modernization

Xining, Qinghai Province
Institute of Salt Lakes

Miscellaneous CAS Research Institutions
Chinese Academy of Sciences Bureau of Applied Mathematics, Beijing
Chinese Academy of Sciences Committee on the Integrated Survey of Natural Resources, Beijing
Chinese Academy of Sciences Computer Center, Beijing

Publishing House
Chinese Academy of Sciences Science Press, Beijing

CAS Libraries
Chinese Academy of Sciences Main Library, Beijing
Branch Library, Wuhan, Hubei Province
Branch Library, Lanzhou, Gansu Province
Branch Library, Shanghai

CAS Factories
Chinese Academy of Sciences Wuhan Scientific Instruments Factory, Wuhan, Hubei Province
Chinese Academy of Sciences Shenyang Scientific Instruments Factory, Shenyang, Liaoning Province
Chinese Academy of Sciences Astronomical Instruments Factory, Nanjing, Jiangsu Province
Chinese Academy of Sciences Xinxiang Factory of Semiconductor Components, Xinxiang, Henan Province
Chinese Academy of Sciences Scientific Instruments Factory, Beijing
Chinese Academy of Sciences Yanshan Scientific Instruments Factory, Beijing

CAS Universities
Chinese Academy of Sciences University of Science and Technology of China, Hefei, Anhui Province
Chinese Academy of Sciences School of Graduate Study, University of Science and Technology of China, Beijing

Chinese Academy of Sciences
Zhejiang University,
Hangzhou, Zhejiang
Province
Chinese Academy of Sciences
Chengdu University of
Science and Technology,
Chengdu, Sichuan
Province
Chinese Academy of Sciences
Haerbin University of
Science and Technology,
Haerbin, Heilongjiang
Province

Appendix D

RESEARCH INSTITUTES OF THE CHINESE ACADEMY OF SOCIAL SCIENCES

Institute of Literature
Institute of Foreign Literature
Institute of Linguistics
Institute of History (Pre-1840)
Institute of Modern History
Institute of World History
Institute of Philosophy
Institute of World Religions
Institute of Law
Institute of Archeology
Institute of Nationalities
Institute of Journalism
Institute of Scientific Information
Institute of Economics
Institute of World Economics
Institute of Industrial Economics
Institute of Agricultural Economics
Institute of Finance and Trade
Institute of Banking
Institute of Economic Statistics
Institute of South Asian Studies
Institute of World Politics
Sociology Institute (in preparation)
Marxism Leninism Mao Zedong Thought Institute
Institute of Econometrics

All are located in Beijing.

Appendix E

Map of China

Size of China Compared to the United States

Appendix F

CHINA'S MAJOR MINISTRIES AND CENTRAL AGENCIES WITH ACADEMIC AND RESEARCH CONCERNS

The following ministries and ministry-level government agencies in China run factories or other economic enterprises and/or research institutes, and, in most cases, institutions of higher education. They are all based in Beijing and their Ministers or Directors are listed.

First Ministry of Machine-building (heavy machinery): Zhou Zijian

Second Ministry of Machine-building (nuclear reactors and weapons): Liu Wei

Third Ministry of Machine-building (conventional weapons): Lu Dong

Fourth Ministry of Machine-building (electronics): Qian Min

Fifth Ministry of Machine-building (artillery, tanks): Zhang Zhen

Sixth Ministry of Machine-building (shipbuilding): Chai Shufan

Seventh Ministry of Machine-building (aircraft and missiles): Zheng Tianxiang

Eighth Ministry of Machine-building (specialty unknown): Jiao Royu

Ministry of Metallurgical Industry: Tang Ke

Ministry of Coal Industry: Xiao Han

Ministry of Petroleum Industry: Song Zhenming

Ministry of Geology: Sun Daguang

Ministry of Chemical Industry: Sun Jingwen

Ministry of Light Industry: Liang Lingguang

Ministry of Water Conservancy: Qian Zhengying

Ministry of Electric Power: Liu Lanbo

Ministry of Textile Industry: Qian Zhiguang

Ministry of Communications (highways, waterways): Zeng Sheng

Ministry of Railways: Guo Weicheng

Ministry of Post and Telecommunications: Wang Zigang

Ministry of Agriculture: Huo Shilian

Ministry of Forestry: Luo Yuchuan

Ministry of Agricultural Machinery: Yang Ligong

State Oceanography Bureau: Shen Zhendong
State Seismological Bureau: Cao Yu
State Standardization and Metrology Bureau: Yue Zhidian
State Surveying and Cartography Bureau: Yang Derong
State Aquatic Products Bureau: Zhang Zhao
Central Meteorological Bureau: Rao Xing
Chinese Academy of Sciences: Fang Yi

Appendix G

LIST OF U.S.-CHINA GOVERNMENT AGREEMENTS PERTAINING TO EDUCATION

Exchange Activity	Agreement	Implementing Agencies
General exchange of students and scholars for extended training	Accord on Students and Scholars under S&T agreement	Chinese to U.S.—sending: Ministry of Education, Chinese Academy of Sciences and possibly others; receiving: individual institutions
		U.S. to China—sending: Committee on Scholarly Communication with the PRC; receiving: Ministry of Education
Personnel training	High Energy Physics Implementing Agreement	Bi-national Committee on High Energy Physics
Personnel training	Meteorology Agreement	National Oceanic and Atmospheric Administration (Commerce Department)-Central Meteorology Bureau
Personnel training	Oceans and Fisheries	National Oceanic and Atmospheric Administration (Commerce Department)-State Oceanography Bureau
Personnel training	Technical Information	National Technical Information Service (Commerce Department)-State Science and Technology Commission

Exchange Activity	Agreement	Implementing Agencies
Personnel training (not explicit)	Standards and Metrology	National Bureau of Standards (Commerce Department)-State Bureau of Metrology
Personnel training	Hydroelectric and Related Water Resource Management	Protocol covers all interested private and governmental parties. Involved to date are the U.S. Army Corps of Engineers, the U.S. Bureau of Reclamation, the Tennessee Valley Authority and China's Ministries of Electric Power and of Water Conservancy
Personnel training	Agriculture	International Science and Education Council (ISEC), joint entity of USDA and the National Association of State Universities and Land Grant Colleges (NASULGC)-Ministry of Agriculture
Language Teaching Symposia Chinese Language (in China) English Language (in U.S.)	Cultural Agreement	U.S. Office of Education (USOE)-Ministry of Education (MOE)
Delegations (3 weeks) U.S. local education leaders U.S. primary/secondary teachers U.S. educational researchers Chinese technical/vocational education teachers Chinese adult education teachers	Cultural Agreement	USOE-MOE

Exchange Activity	Agreement	Implementing Agencies
Chinese information and library experts Chinese education researchers		
Short-term training (6 weeks) U.S. teachers of Chinese	Cultural Agreement	USOE-MOE
Chinese Education Delegation to U.S.	Cultural Agreement	U.S. International Communication Agency (USICA), Educational and Cultural Affairs Department (ECA)-MOE/Ministry of Culture (MOC)
	Cultural Agreement	
American teachers of English to China (10)	Cultural Agreement	USICA-MOE/MOC
Chinese teachers of Chinese to U.S. (10)	Cultural Agreement	USICA-MOE/MOC
Textbook exchanges	Cultural Agreement	USICA-MOE/MOC
Encouragement of contacts between institutions of higher education	Cultural Agreement	USICA-MOE/MOC

Appendix H

US-PRC JOINT COMMISSION ON SCIENTIFIC AND TECHNOLOGICAL COOPERATION

U.S. Membership

Co-Chairman

Dr. Frank Press
Director
Office of Science and Technology Policy

Ex-Officio Members

Dr. Richard C. Atkinson
Director
National Science Foundation

Honorable John E. Reinhardt
Director
International Communication Agency

Honorable Thomas R. Pickering
Assistant Secretary for Oceans and International Environmental and Scientific Affairs
Department of State

U.S. Agency Representatives

Dr. Dale E. Hathaway
Under Secretary for International Affairs and Commodity Programs
Department of Agriculture

Dr. John M. Deutch
Under Secretary
Department of Energy

Honorable Robert A. Frosch
Administrator
National Aeronautics and Space Administration

Private Sector Representatives

Dr. Robert M. Adams
Vice President for Research and Development
Minnesota Mining and Manufacturing Company

Mr. A. Doak Barnett
Senior Fellow
The Brookings Institution

Dr. David E. Bell
Vice President, International Division
Ford Foundation

Dr. Marvin L. Goldberger
President
California Institute of Technology

Dr. Philip Handler
President
National Academy of Sciences

PRC Membership

Co-Chairman

His Excellency Fang Yi
Minister in Charge
State Science and Technology Commission

Members

Jiang Ming
Vice Minister
State Science and Technology Commission

He Kang
Vice Minister, State Agricultural Commission
Vice Minister, Ministry of Agricultural

Pu Tongxiu
Vice Minister
Ministry of Education

Qin Lisheng
Deputy General Secretary
Chinese Academy of Sciences

Han Xu
Director, Department for American and Oceanian Affairs
Ministry of Foreign Affairs

Ren Xinmin
President, Chinese Academy of Space Technology
President, China Space Flight Society

Zou Jiayou
Presient, Chinese Academy of Geological Sciences
Leading Member, State Geology Bureau

Deng Jiandong
Vice President
Chinese Academy of Medical Sciences

Zhang Wenyu
Director, Institute of High Energy Physics
Chinese Academy of Sciences

Luo Peilin
Deputy Director, Bureau of Science and Technology
Fourth Ministry of Machine-Building

Executive Secretary

Wu Yikang
Division Chief, Bureau of Foreign Affairs
State Technological Commission

Appendix I

KEY CONTACTS IN THE U.S. GOVERNMENT

The following offices and persons are in charge of coordinating exchange activities with China in their respective areas of concern.

Overall Coordinators

Dr. Frank Press
Director, Office of Science and Technology Policy
Executive Office of the President
OEB Room 360
Washington, DC 20500

Pierre Shostal, Director
Office of Cooperative Science and Technology Programs
OES/SCT
Department of State
Washington, DC 20520

Government Agencies

Department of Energy

Jack Vanderyn
Director, Office of International Affairs
Department of Energy
Mail Stop 7F031
1000 Independence Avenue, SW
Washington, DC 20585

U.S. International Communication Agency

ICA/EA/China Desk
1776 Pennsylvania Avenue, NW
Washington, DC 20547

Department of Commerce

Suzanne Lotarski, Deputy Director, or
Lili Monk, International Trade Specialist
People's Republic of China Affairs Division
Bureau of East West Trade
Department of Commerce
14th and E Streets, NW, Room 4044
Washington, DC 20230

Department of Health, Education and Welfare

Dr. John H. Bryant (Health)
Deputy Assistant Secretary for Health
Department of Health, Education and Welfare
Parklawn Building, Room 187
5600 Fishers Lane
Rockville, MD 20852

Edward L. Meador (Education)
Director, Division of International Education
U.S. Office of Education
Department of Health, Education and Welfare
7th and D Streets, SW, Room 3919
Washington, DC 20202

National Aeronautics and Space Administration

Peter Smith
International Affairs Division
National Aeronautics and Space Administration
Code L1B 15
Washington, DC 20546

U.S. Department of Agriculture

1. Scientific exchanges

Roger Neetz
Office of International Development
USDA
6543 South Building
Washington, DC 20250

2. Agricultural technology and marketing

David M. Schoonover
Director, Centrally Planned Economies Division
Foreign Agriculture Service
USDA
6542 South Building
Washington, DC 20250

3. Economics and statistics

Charles Liu
ESCS
Room 314
500 12th Street
USDA
Washington, DC 20250

U.S. Geological Survey

Maurice J. Terman
U.S. Geological Survey
U.S. Department of Interior
Mail Stop 917
Reston, VA 22090

Appendix J

PRINCIPAL NATIONAL U.S. ORGANIZATIONS INVOLVED IN EXCHANGES WITH CHINA

Three major national organizations in the United States have conducted and promoted quasi-official exchange activities with China since the 1972 signing of the Shanghai Communique. These are:

- The Committee on Scholarly Communication with People's Republic of China (CSCPRC)

  National Academy of Sciences
  2101 Constitution Avenue
  Washington, DC 20418
  202/389-6683

  The CSCPRC is sponsored jointly by the National Academy of Sciences, the Social Science Research Council and the American Council of Learned Societies. CSCPRC programs are summarized in Section III. E. In addition to its exchange programs, the CSCPRC maintains a library of resources on scholarship in China and scholarly exchanges and publishes the bi-monthly *China Exchange Newsletter*. The CSCPRC is co-sponsor, with NAFSA, of the U.S.-China Education Clearinghouse.

- The National Committee on U.S.-China Relations (NCUSCR)

  777 United Nations Plaza
  New York, NY 10017
  212/682-6848

  The National Committee conducts cultural, civic affairs, educational and athletic exchange programs with China. In addition to conducting exchange programs, the Committee provides a wide range of information and advisory services on exchanges with China. The Committee-sponsored delegations publish trip reports. Some of these, dealing with educational matters are listed in Appendix K. The Committee also publishes a newsletter, *Notes from the National Committee*.

- The National Council on U.S.-China Trade (NCUSCT)

  1050 17th Street, NW
  Washington, DC 20036
  202/828-8300

The Trade Council, in its role of promoting international trade, gathers and disseminates information pertaining to China's technology and foreign trade system. The Council maintains a library of pertinent information and publishes the bi-monthly *China Business Review*.

- In addition, a wide range of "people-to-people" exchanges have taken place under the auspices of the U.S.-China People's Friendship Association (USCPFA). The USCPFA has a large number of local chapters and maintains its national office at 635 South Westlake Avenue, Los Angeles, CA 90057.

  The USCPFA publishes *New China*, quarterly. The magazine offices are at 41 Union Square West, Room 721, New York, NY 10003.

- It should also be noted that many American scholarly and professional associations are establishing exchange relations with the counterpart organizations in China. Developments of this type are reported in the CSCPRC's *China Exchange Newsletter*.

- Extensive public education work on China has been carried out since 1975 by the:

  China Council of the Asia Society
  1785 Massachusetts Avenue, NW
  Washington, DC 20036

  The Council operates about a dozen regional councils in various parts of the United States. The Council and its regional councils sponsor and promote public programs, conferences and workshops and cultural exhibits. They also produce books, pamphlets, films and other educational materials and provide special information services to the American print and broadcast media.

Appendix K

SELECTED BIBLIOGRAPHY OF RECENT WORKS ON CHINESE EDUCATION

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Appendix L

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